National Records of Scotland

Household Projections for Scotland (2018-based)

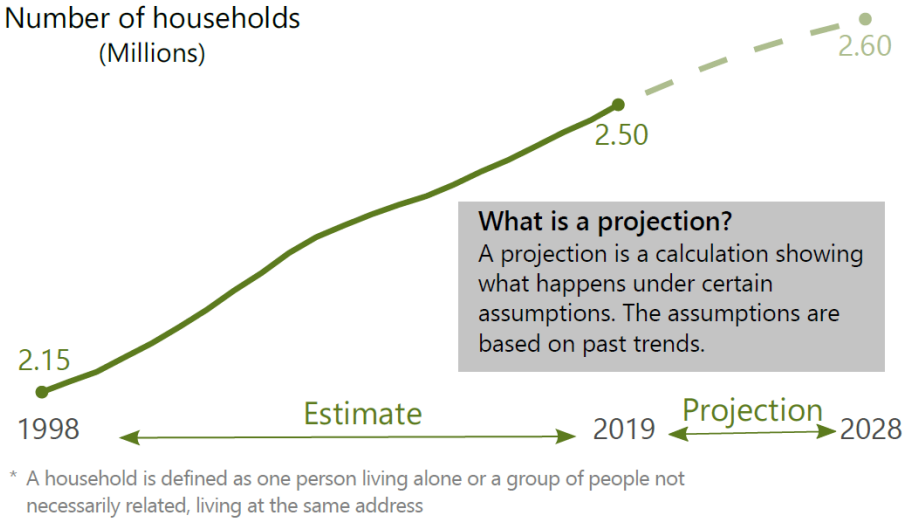
Published on 29 September 2020

This statistical report provides trend-based projections of the number of households in Scotland and in each Council, National Park and Strategic Development Plan area. The projections include breakdowns by type of household and age of household reference person.

By 2028 the number of households is projected to increase

Over the next 10 years the number of households is projected to increase by 120,000 (5%) to 2.60 million.

The projected average increase will be 12,000 more households per year.



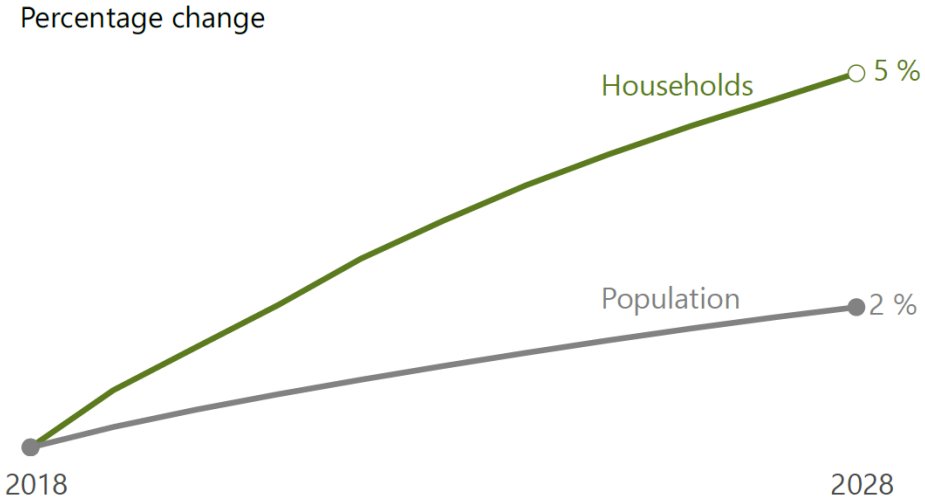
What is a projection?
A projection is a calculation showing what happens under certain assumptions. The assumptions are based on past trends.

* A household is defined as one person living alone or a group of people not necessarily related, living at the same address

The number of households is projected to increase faster than the population

The average number of people in a household is projected to decrease as people increasingly live in smaller households or alone.

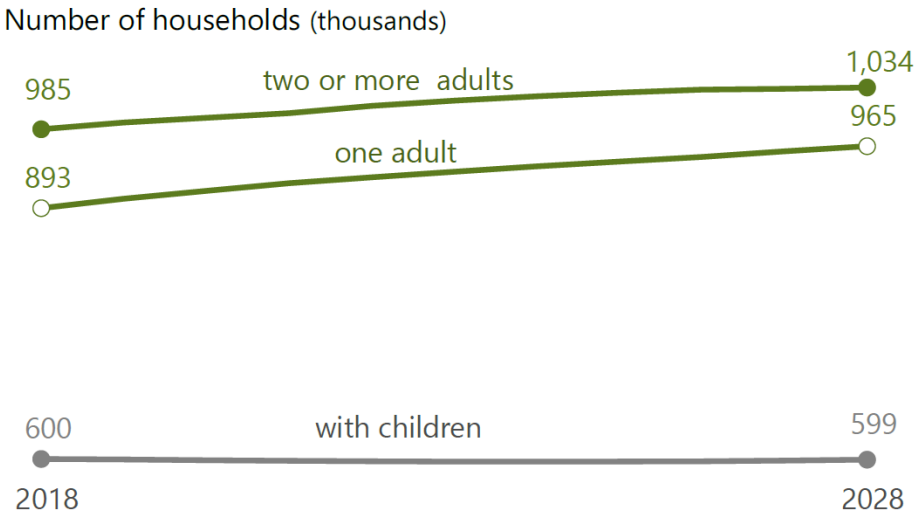
This causes households to increase much faster than the population.



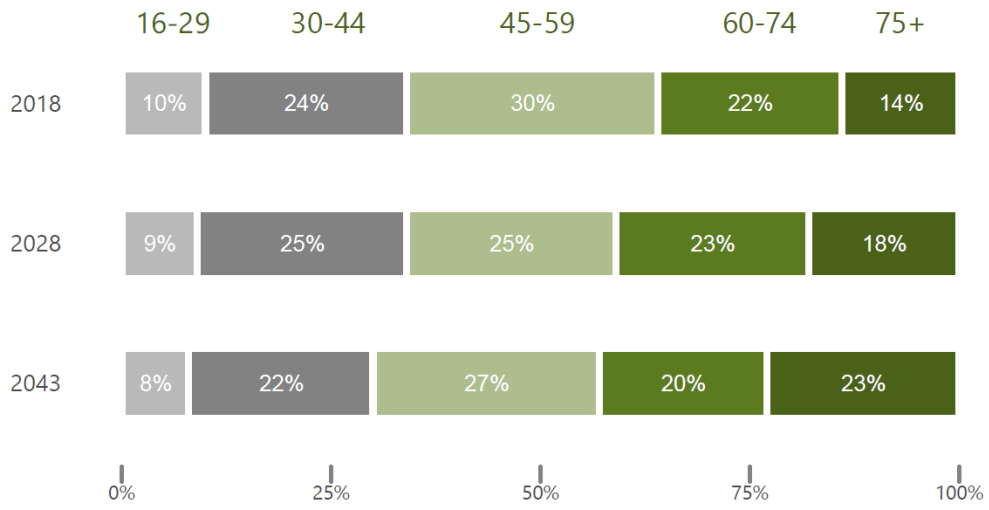
More people are living alone

One person households are projected to have the largest increase by 2028. This is mainly due to the growth in the number of older people, as older people are more likely to live alone or in smaller households.

Households with children are projected to slightly decline.



Percentage of projected households by age group



Most of the growth is among older age groups

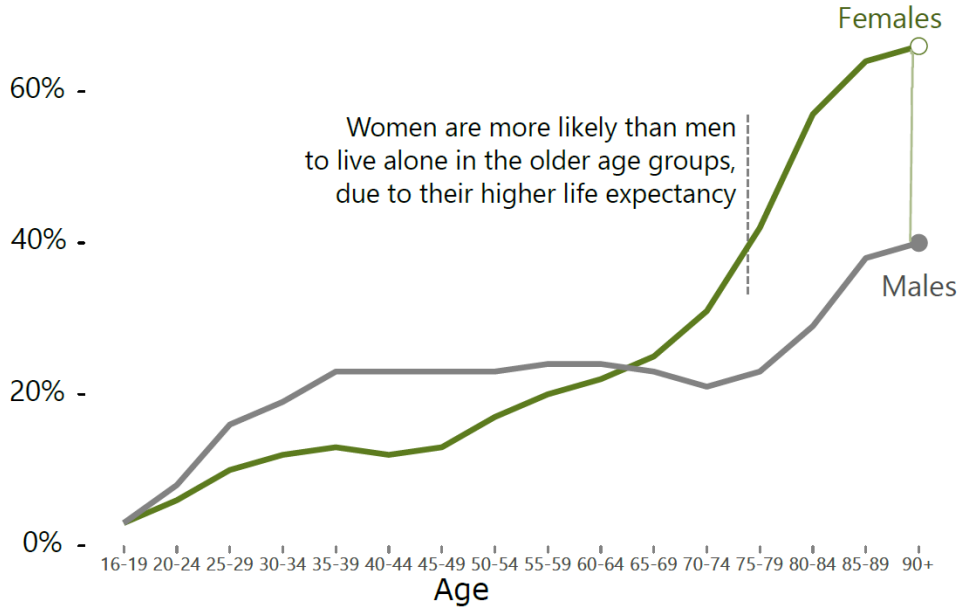
The proportion of the households with an HRP* aged 75 or over is projected to increase, reaching 23% by 2043.

The proportion of households headed by an HRP aged under 75 is projected to decrease.

*

*Household reference person (HRP) is defined as the eldest economically active person in the household, then the eldest inactive person if there was no economically active person.

Percentage of people projected to live alone in 2028



Older people are more likely to live alone

Older people are more likely to live alone than younger people.

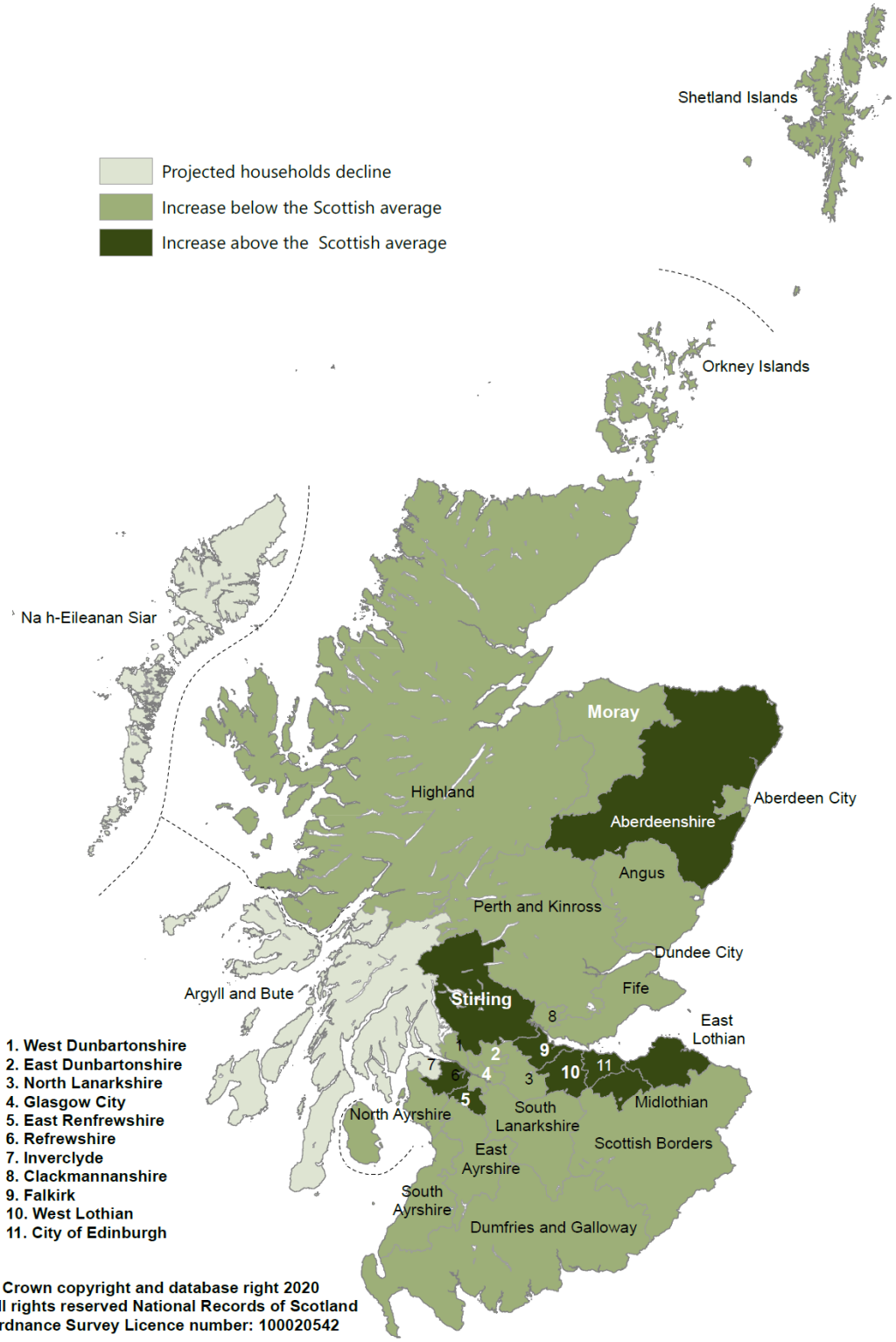
The number of people aged 65 and over living alone is projected to increase by 18% over the next 10 years.

Increases are particularly large in the oldest age groups (85 or over) where the number of people living alone is projected to increase by 21%.

The gender difference reflects women's greater life expectancy and tendency to outlive male partners.

The level of projected households change varies across Scotland's council areas

The number of households is projected to increase in most councils by 2028 (28 out of 32 areas). The larger percentage increases in the number of households are projected to be in the Edinburgh and Lothian area. In contrast, decreases are projected for some council areas in the west of the country.



There is more information on Scotland's council areas in the interactive data visualisation accompanying the 2018-based household projections which is available from the NRS website.

Contents

1. Key Findings

Change in Scotland's households

- The number of households in Scotland is projected to increase by 120,000 (5%) over the next 10 years, from 2.48 million in 2018 to 2.60 million in 2028. Over the entire 25-year projection period, the number of households is projected to increase by 10% to 2.71 million by 2043.
- This projection equates to an average of 12,000 additional households per year up to 2028. The rate of increase is lower in the later years of the projection period, with an average of 7,800 additional households per year projected between 2028 and 2043.
- Scotland's population is ageing. The number of people aged 65 and over is increasing much faster than the number of children and younger adults. This has an impact on household structure as children tend to live in larger households and older people in smaller ones.

Change by household type

- Much of the projected growth in households between 2018 and 2028 will come from one-person and two adult households without dependent children. The numbers of these households are projected to increase by 8% (to 965,100 households) and 7% (to 830,600 households) respectively.
- A 2% increase between 2018 and 2028 is projected in the number of households comprising one adult with children, increasing to 157,900 households. In contrast, the numbers of households of two adults with children or three or more adults only are projected to fall slightly, by 1% (to 441,100 households) and 3% (to 203,000 households) respectively.

People living alone

- The gap between the average life expectancy of men and women in Scotland is decreasing and so the number of older men is projected to increase more rapidly than the number of older women. Compared with 2018, the number of men aged 65 and over living alone is projected to increase by 23% (to 139,500) in 2028.
- Over the same period, the number of women aged 65 and over living alone is projected to increase by 16% (to 245,900). The substantial projected increase in the number of older households, and particularly the increase in older people living alone, has implications for services and policies aimed at supporting older people.
- As a result of more people living alone or in smaller households, the average household size is projected to decrease from 2.15 people in 2018 to 2.12 people in 2028, and then to 2.00 people in 2043.

Change by age of household reference person

- Growth in the number of households is fastest where the household reference person (HRP) is older: the number of households where the HRP is someone aged 65 or over is projected to increase by 20% between 2018 and 2028 (to 824,300 households). The increase is particularly large in the older age groups: the numbers of households with an HRP aged 75 to 84 is projected to increase by 30% (to 341,900 households), while for households with an HRP aged 85 or over a 22% increase (to 116,800 households) is projected.

- The number of households where the HRP is someone aged under 65 is projected to decrease marginally (by 0.8%) from 1.79 million in 2018 to 1.77 million in 2028.

Change by area

- Between 2018 and 2028, increases in the number of households are projected in 28 of Scotland's 32 council areas, with only Argyll and Bute, Inverclyde, Na-h Eileanan Siar and North Ayrshire projected to have decreases. The fastest growing areas are in the east of the country, with Midlothian projected to have the biggest (16%) percentage increase.
- The number of households in Cairngorms National Park (CNP) is projected to rise from 8,700 in 2018 to 9,400 in 2028, an increase of 8%. The number of households in Loch Lomond and the Trossachs National Park (LLTNP) is also projected to grow by 2%, from 6,700 to 6,800.
- The number of households is projected to increase in each of the four Strategic Development Plan areas in Scotland from 2018 to 2028, ranging from an increase of 3% in the TAYplan area to an increase of 8% in the SESplan area.

Variant projections

- While the principal or main projection is for a 10% increase in the number of households in Scotland over the whole 25-year projection period to 2043, variant projections based on assumptions about lower and higher levels of migration suggest the increase could be between 8% and 12%.

Difference from previous projections

- The overall increase in the number of households projected by the 2018-based projections is lower compared with the 2016-based projections throughout the twenty-five year period: 10% compared with 13%.

Do these statistics take into account the impact of COVID-19?

These household projections do not take into account the impact of COVID-19. However, the statistics can help understanding of the impact of the pandemic on different household types.
For example, people living alone may have found self-isolation especially difficult. These statistics indicate that about 1 in 5 people live alone, and that single person households make up over a third of all Scotland's households. Households containing children will have been affected by the school and nursery closures - nearly a quarter of households contain children under the age of 16.

Links to resources:

- Check out our blog for more information about the range of NRS statistics that are useful for understanding COVID-19.
- Research published by the Centre for Population Change analysing household vulnerability – on dimensions of health, employment, housing, finance and digital - to the effects of COVID-19 by household type.

2. What are household projections?

Producing the household projections

Household projections are produced by the National Records of Scotland (NRS) every two years. This report presents projections of the number of households in Scotland over the 25-year period from 2018 to 2043, though its main focus is on results for the principal projection over the **next 10 years** to mid-2028.

Household projections are not a prediction or forecast of how many houses should be built in the future. Instead, they show how many additional households would form if assumptions based on previous demographic trends in population growth and household formation were to be realised. Projections do not factor in the effect of coronavirus (COVID-19) or attempt to predict the impact of political or economic circumstances.

Separate sets of projections are available for:

- Scotland
- Council areas
- Strategic Development Plan areas
- Scotland's National Park areas

These latest household projections incorporate the 2018-based population projections and the 2018 and 2019 household estimates. Information from Scotland's Census 2001 and 2011 is used to project trends in the types of household that people are living in. Data from a range of sources on residents in communal establishments, such as care homes or prisons, are also included. Further information on the data and methods used to produce the household projections is available in Section 8. This includes background on some modifications to the projections methodology used previously.

A glossary of some of the terms used in this publication can be found in Section 8.

Projections…

…are		…are not	
✓	statistics on the potential future number and type of households in Scotland	✗	exact, as real population change will inevitably differ by some extent
✓	based on past-trends and assumptions of future levels of fertility, mortality and migration and household formation	✗	forecasts based on predictions about future political and economic changes
✓	uncertain, and a degree of uncertainty already exists in the base-year data	✗	as accurate for years in the distant future, and for smaller areas and smaller groups of people

Interpreting the household projections

The household projections have some limitations. A projection is a calculation showing what happens if particular assumptions are made. The household projections are trend-based and are not, therefore, policy-based forecasts of what the Government expects to happen. No forecast is made of possible future changes that may alter these trends, such as economic and social change, or of imbalances between housing supply and demand. In particular, the assumptions used in the projections do not take account of the potential impact of the COVID-19 pandemic.

The household projections are based on the population projections and trends in household formation. The assumptions used for the population projections, such as future migration, fertility and mortality, will therefore affect the household projections. Further information on these assumptions can be found in the 2018-based population projections for Scotland publication.

There will be more uncertainty in the projections for smaller areas and smaller groups of people. The populations of the two National Parks in particular are quite small, and forward projections for such small populations are less reliable than for larger communities as, for example, it is harder to predict the impact of future migration on smaller areas. The uncertainty in the projections also increases as they are taken further into the future, therefore care must be taken in their interpretation.

More information on the limitations of the household projections can be found in Section 8.

The **principal projection** is based on the set of assumptions we think are most likely to occur.

This report focuses on the 'principal projection', the projection based on the assumptions that we think are most likely to occur. Information om some variant household projections which are prepared using alternative assumptions, eg on different levels of assumed migration in the underlying population projections, are provided in Section 6.

The main focus of this report is mainly on results of the projections over the 10 years to mid-2028, although these are compared in places to the projections for the whole 25 years of the overall projection period, to mid-2043. The results of projections for all years up to 2043 can be found in the detailed datasets on the National Records of Scotland (NRS) website.

Uses of the household projections

Household projections are mainly used for informing council decisions about future housing need and service provision (such as waste collection and community care). The projections feed into development plans, including assessments of housing need and demand for the future[1]. The projections are also used to help inform policy development and for answering requests for information from Ministers, councils, academics, other organisations and the general public.

Household estimates and projections (for Scotland and the UK) are used directly and indirectly in the production of certain statistics contained within the annual Government Expenditure and

1) Household projections are only one element to be taken into account in assessing future housing need and demand. More information about the planning system in Scotland is available from the **Scottish Government website**.

Revenues Scotland (GERS) publication, and in the Quarterly National Accounts Scotland (QNAS) releases which are available on the Scottish Government (SG) website. The estimates and projections are used in QNAS as an auxiliary variable (alongside consumption data) in the production of Household Final Consumption Expenditure estimates by product. In turn, these expenditures inform the GERS publication in estimating revenues associated with consumption (e.g. VAT and duties).

Some councils and other planning authorities use information from the household projections, such as the proportion of people of each age group living in communal establishments, in producing local projections of future household numbers. For example, some Development Plans may demonstrate departures from projections that seem better able to fit local circumstances.

What are you looking for?	**Where to find it**
The data used in this publication	*All data*
The figures used in this publication	*All charts*
Summary dataset for each area	*Detailed data by area*
Methodology for the projections	*Background Notes*
Compare the projected households in council areas	*Interactive charts*

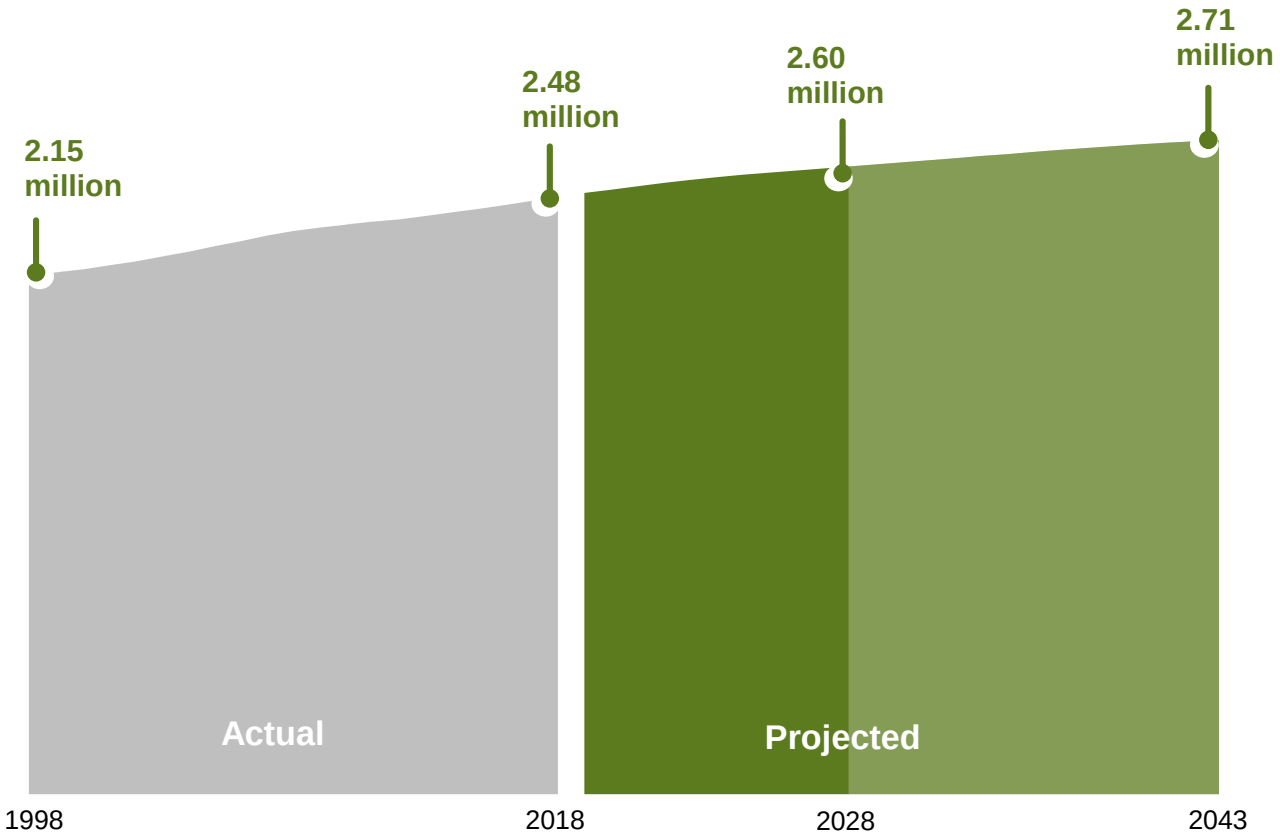
Scotland's households: recent trends

A **'household'** refers to a group of people living together in a **dwelling**. This could be one person living alone, or a group of people who may or may not be related to each other.

There were 2.50 million households and 2.64 million dwellings in Scotland in 2019.

Over the last 10 years the number of households in Scotland has grown by 143,800 (6.1%) - see Figure 1. Over the last decade the number of households increased faster than the population (6.1% compared to 4.4%) - see Figure 2.

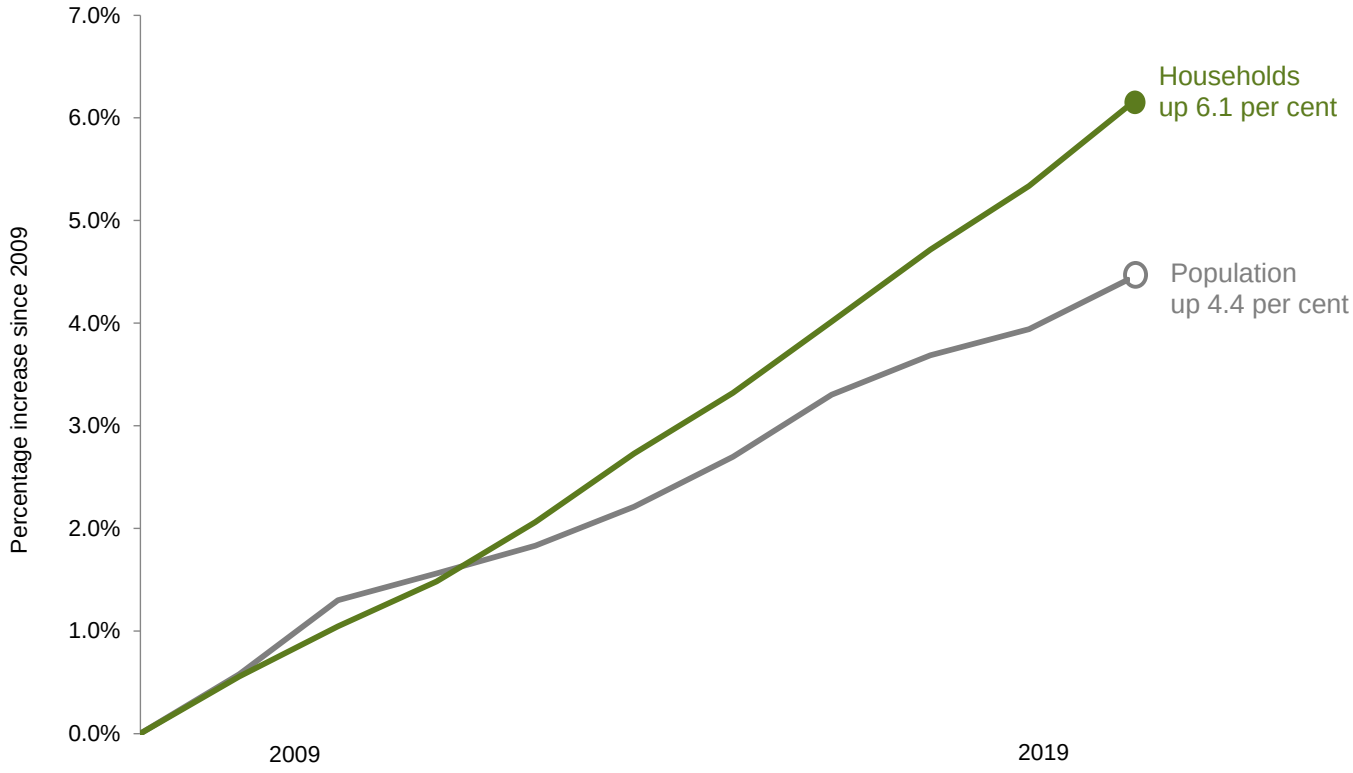
Figure 1: Number of households in Scotland, actual and projected (2018-based), 1998 to 2043



Source for household estimates: National Records of Scotland, Estimates of Households and Dwellings in Scotland.

The growth in households has been faster than the population growth because people are increasingly living alone or in smaller households. One person households have become the most common type in recent years. The number of single person households comprised of males aged 30 to 64 has also increased relative to the population in this group (Figure 3).

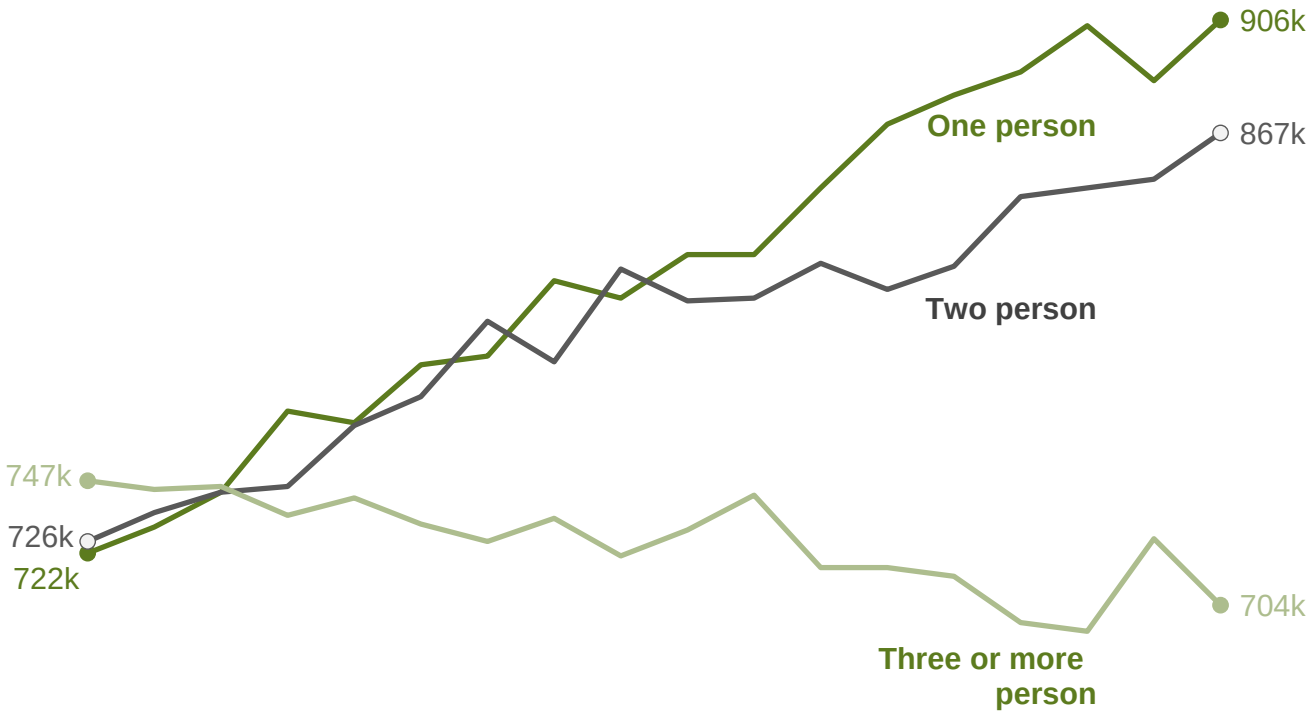
Figure 2: Trends in households and population, mid-2009 to mid-2019



Source for population: National Records of Scotland Mid-Year Population Estimates

The average household size (number of people per household) has been on a downward trend for many years, although recently the rate of decrease has been slower. Over the last decade, the average household size fell from 2.18 people per household in 2009 to 2.15 people per household in 2019. These changes are partly due to the ageing population, as elderly people are more likely than younger people to live alone or with just one other person. However, there are some exceptions across Scotland – the average household size has been increasing in Edinburgh and Glasgow (4.7% and 5.0% increase from 2009 to 2019).

Figure 3: Change in household types in Scotland, 2001 to 2018



Two or more adults households could contain adults, or both adults and children

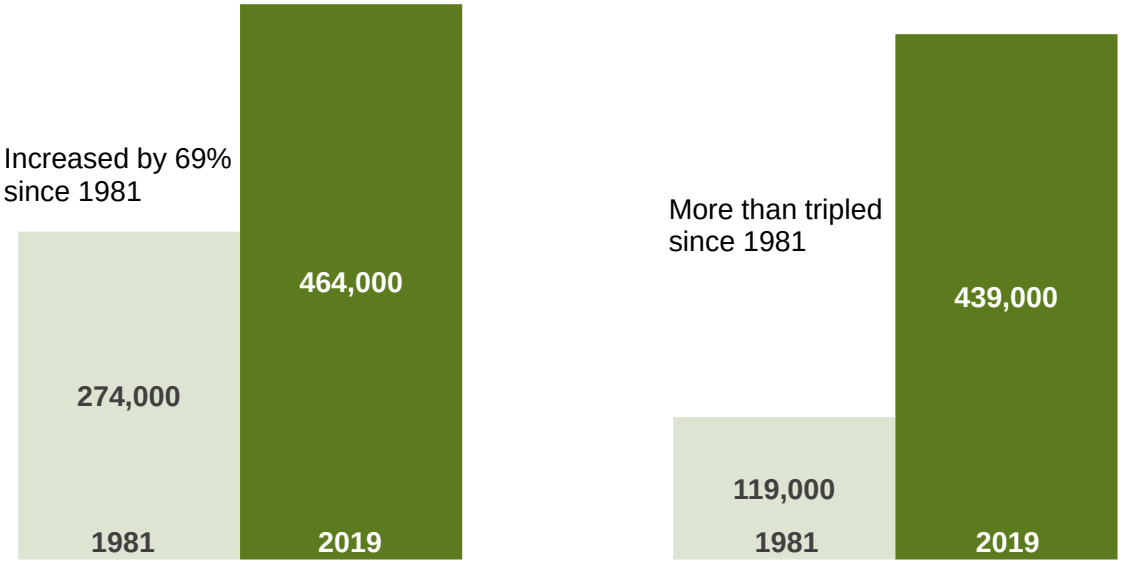
The split by sex of people living alone is now close to 50:50. The proportion of people living alone who were female fell from 70% in 1981 to 51% in 2019. The higher number of females living alone is mainly due to females outliving their partners. Figure 4 shows the number of single person households by sex.

The number of households has grown in every council area over the 10 years to 2019. The areas with the greatest increase in households in percentage terms have been:

- Midlothian (an increase of 15.6%, 5,400 households)
- Orkney Islands (an increase of 11.3%, 1,100 households)
- East Lothian (an increase of 10.8%, 4,600 households).

City of Edinburgh has seen the largest increase in terms of absolute numbers (17,800 households, an increase of 8.1%).

Figure 4: Number of women and men living alone in 1981 and 2019



Source: 1981, Census data

3. Household projections for Scotland

Projected changes in number of households

Total number of households is projected to increase 4.9% by 2028

The number of households in Scotland is projected to increase by **5%** between 2018 and 2028. The corresponding percentage increase is **7%** in England, **4%** in Wales and **4%** in Northern Ireland.

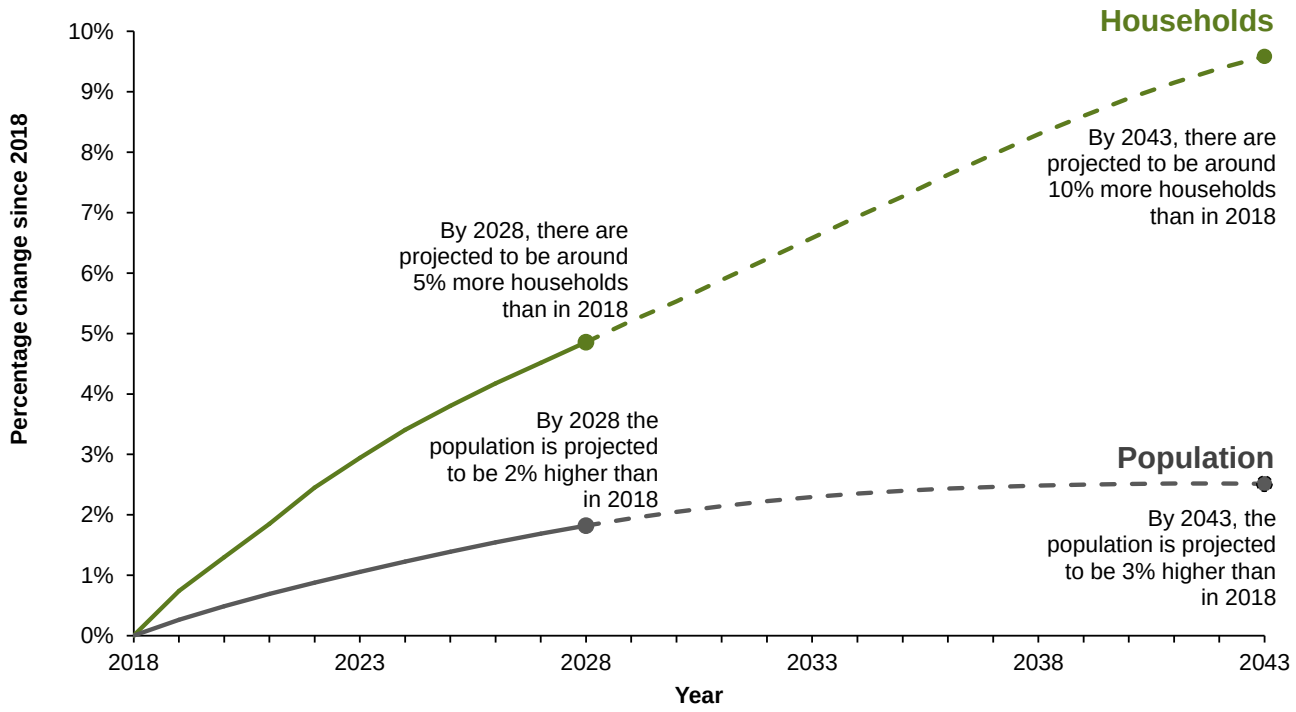
Between 2018 and 2028, the number of households in Scotland is projected to grow from 2.48 million to 2.60 million, an increase of 4.9%. This equates to an average of 12,000 additional households per year.

Over the entire 25-year projection period, the number of households is projected to increase by 9.6% to 2.71 million in 2043. The rate of increase is lower in the later years of the projection period, with an average of 7,800 additional households per year projected from 2028.

The household projections are affected by the projected trends in the Scottish population. The population is projected to increase by 1.8% between 2018 and 2028, and by 2.5% over the whole projection period from 2018 to 2043, with average annual increases that are greater at the beginning of the projection period than at the end. This rise in population is a main driver of the increase in household numbers over the projection period.

However, the household projections increase by a larger percentage than the population projections, as shown in Figure 5. The larger change in the household projections is a result of more people living alone or in smaller households (see Section 3 – Projected changes in household type). Scotland's population is ageing, with the number of people aged 65 or over increasing much faster than the number of children and younger adults. This has an impact on household structure as children tend to live in larger households and older people in smaller ones.

Figure 5: Projected change in number of households and population in Scotland, 2018 to 2043



The average household size is projected to decrease from 2.15 people in 2018 to 2.08 people in 2028 and then to 2.00 in 2043. This continues a long-term decline in average household size, although the rate of decrease has been slowing down in recent decades. In 1961, the average household size was over three people, and it has been falling over time as more people live in smaller households and fewer people live in large households. Figure 3 shows how one person households have become the most common household size in recent years.

The economic downturn which began in 2008 also had an effect on household numbers. Numbers of households have risen more slowly since then[2]. A reduction in the number of new homes being built[3] (although this has recovered somewhat in more recent years) and problems with affordability and obtaining mortgages, amongst other factors, have contributed to a slower rate of increase in household numbers since 2008 than earlier in that decade. The biggest effect of this has been on young adults. The number of young adults aged 20 to 34 renting or living with their parents has been rising, which affects overall household numbers and sizes. In contrast, the level of home ownership among young adults has been falling[4].

2) 'Estimates of Households and Dwellings in Scotland, 2019' (Table 1) on the NRS website
3) 'Housing Statistics for Scotland - supply of new housing', Scottish Government
4) 'Why are more young people living with their parents?', Office for National Statistics

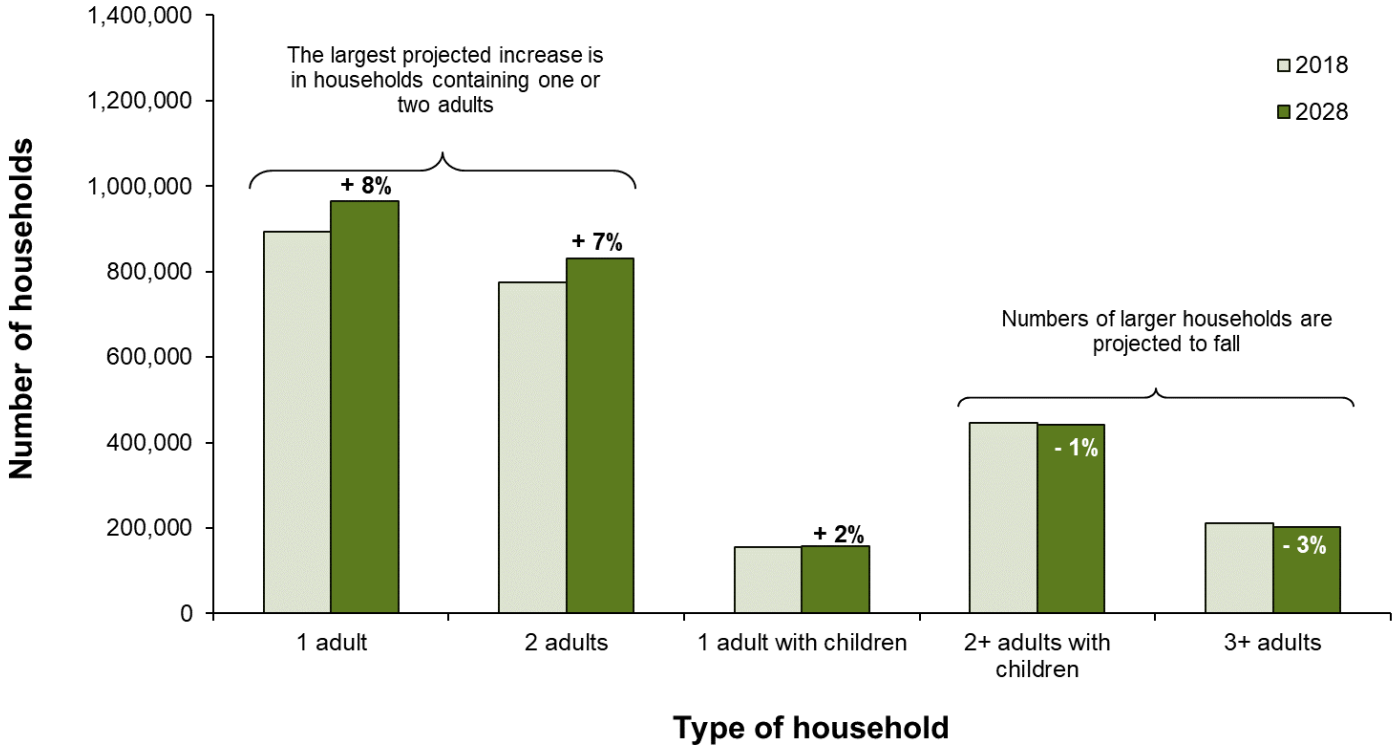
Projected changes in household type

Number of households is projected to grow mainly because of increases in households of one or two adults only without children

The numbers of some household types are projected to increase more than others by 2028, as illustrated in Figure 6.

As described above, the decline in average household size in Scotland results from more people living alone or in smaller households[5]. The largest projected increases between 2018 and 2028 (in number and percentage terms) is in households containing one or two adults only. The number of one person households is projected to increase by 8% (to 965,100 households); and the number of households with just two adults is projected to increase by 7% (to 830,600 households). A smaller increase – of 2% – is projected for households comprising one adult with children, with the number rising to 157,900 households. In contrast, the numbers of households of two adults with children or three or more adults only are projected to fall slightly, by 1% (to 441,100 households) and 3% (to 203,000 households) respectively.

Figure 6: Projected number of households in Scotland by household type, 2018 and 2028



5) Scottish Household Survey, Key Findings 2019, Scottish Government

Projected changes by age of household reference person

Figure 7 shows the projection of the number of households from 2018 to 2028, by the age of the household reference person (HRP). The number of households with older HRPs is projected to rise, reflecting the ageing population in Scotland. The number of households where the HRP is someone aged 65 or over is projected to increase from 689,600 in 2018 to 824,300 in 2028 (an increase of 20%) and then to 965,700 in 2043 (an increase of 40% compared with 2018).

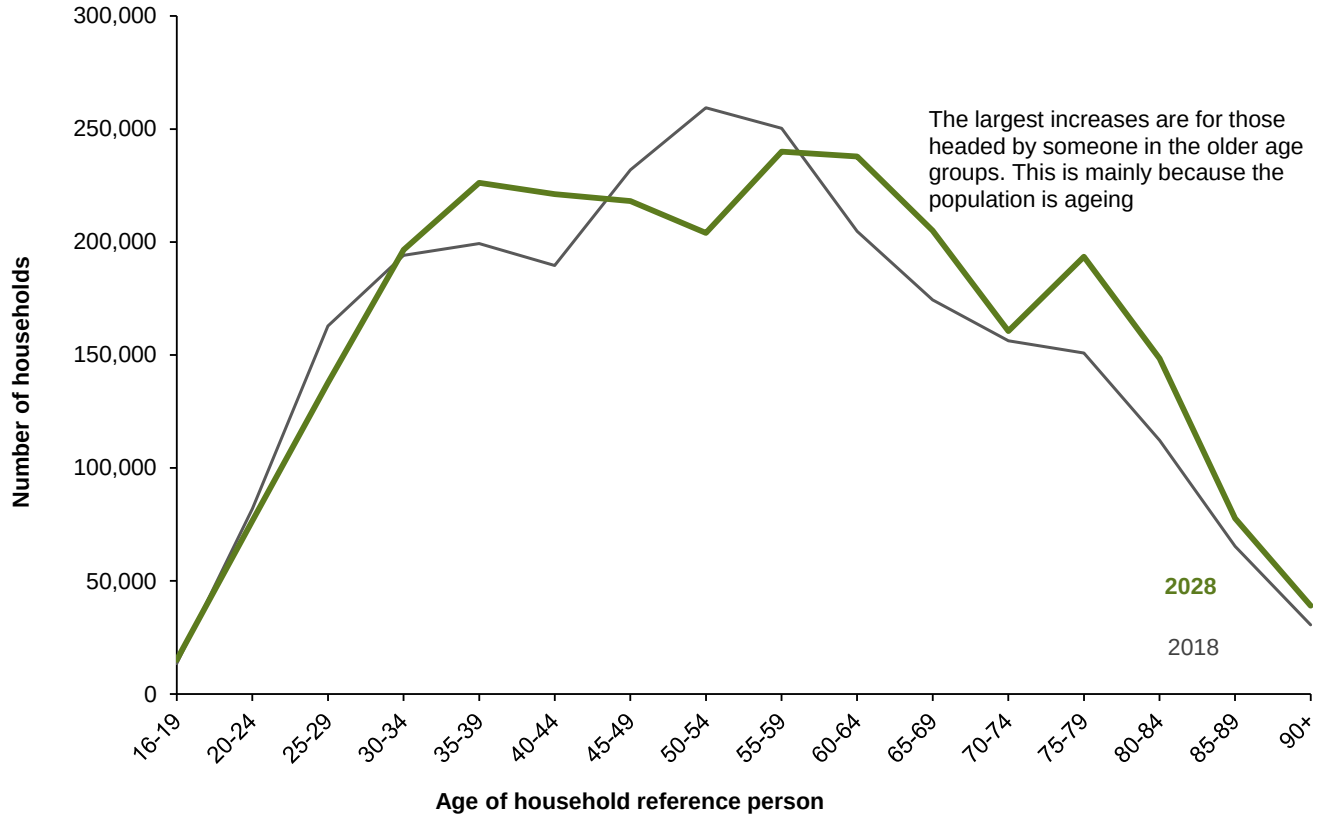
These household projections use the 2011 Census definition of a **household reference person** (HRP); that is the eldest economically active person in the household, then the eldest inactive person if there was no economically active person.

The increases are particularly large in the oldest age groups. The number of households where the HRP is aged 75 to 84 is projected to increase between 2018 and 2028 by 30% (to 341,900 households), and then to 444,800 by 2043 (an increase of 69% compared with 2018). The number of households where the HRP is aged 85 or over is projected to increase by 22% between 2018 and 2028 (to 116,800 households), and then to 178,400 by 2043 (an increase of 86% compared with 2018). In contrast, the number of households where the HRP is someone aged under 65 is projected to decrease marginally (by 0.8%) from 1.79 million in 2018 to 1.77 million in 2028, and then to around 1.75 million by 2043 (a decrease of 2.2% compared with 2018).

Growth in the number of households is driven by an increase in the number of older households.

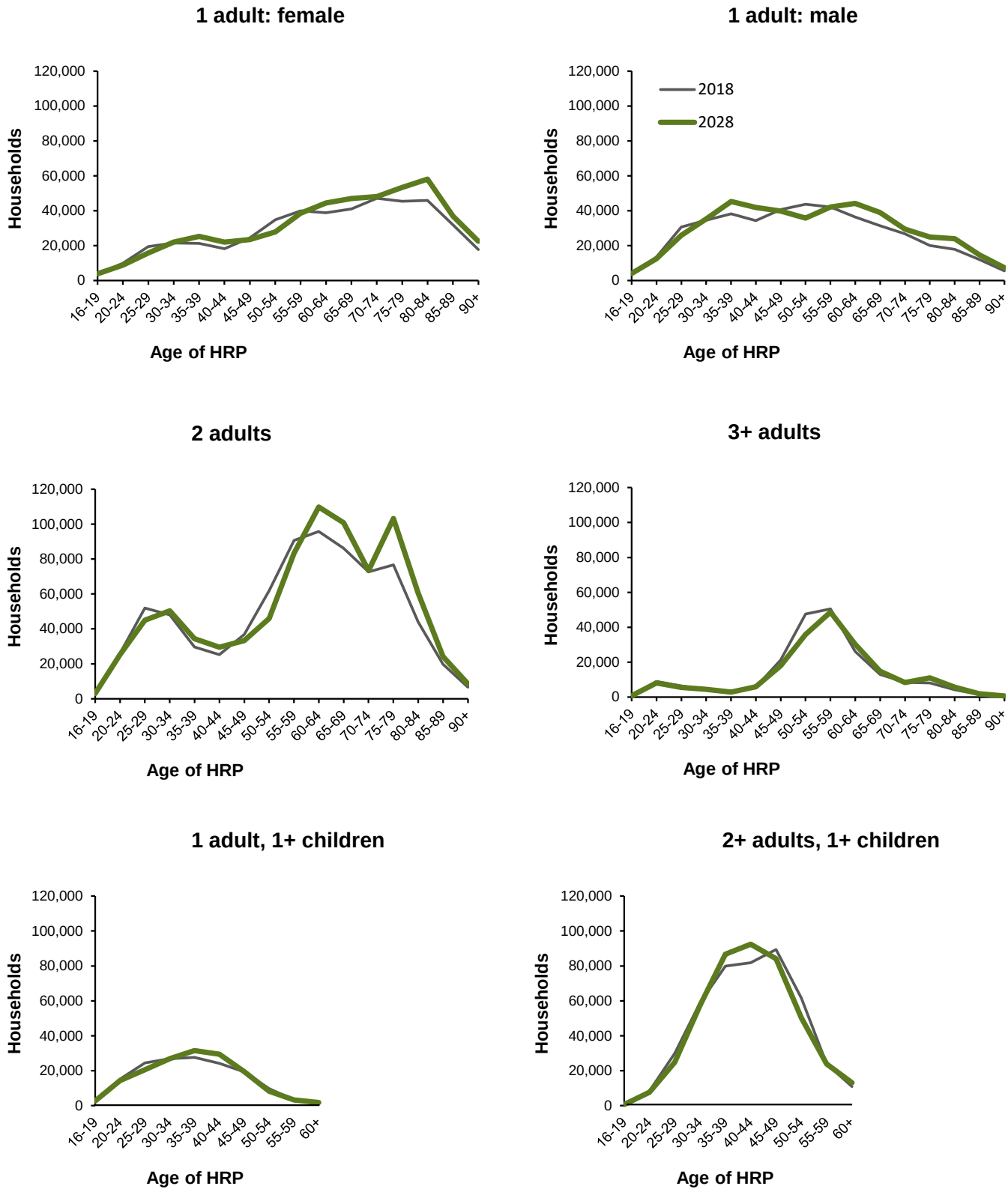
This is mainly because Scotland's population is ageing. The latest population projections show that the number of people aged 65 and over will increase by 19% between 2018 and 2028, and by 36% between 2018 and 2043. For people aged 85 and over the increases are 21% and 84% respectively over these two periods. In contrast the number of people in the population aged 16 to 64 is projected to decrease by 1% between 2018 and 2028 and by 3% between 2018 and 2043.

Figure 7: Projected number of households in Scotland by age of household reference person, 2018 and 2028



Projected household numbers for Scotland, by household type and age of household reference person are shown in Figure 8.

Figure 8: Projected number of households in Scotland by household type and age of household reference person (HRP), 2018 and 2028



One adult households

In 2018, 20% of the population aged 16 or over lived alone and this is projected to rise to 21% in 2028 and to 22% by 2043. The percentages vary according to gender and age, as illustrated in Figure 9. People are more likely to live alone as they become older, for instance over half (54%) of people aged 85 and over are estimated to be living alone in 2018, rising slightly to 55% in both 2028 and 2043.

In 2028, men are projected to be more likely to live alone than women in age groups up to 64 years old. However, from the age of 65 onwards, women are more likely to live alone, and this likelihood increases with age. This pattern reflects women's greater life expectancy, and the tendency of women to marry men who are older than them, which means that women are more likely to outlive their partners.

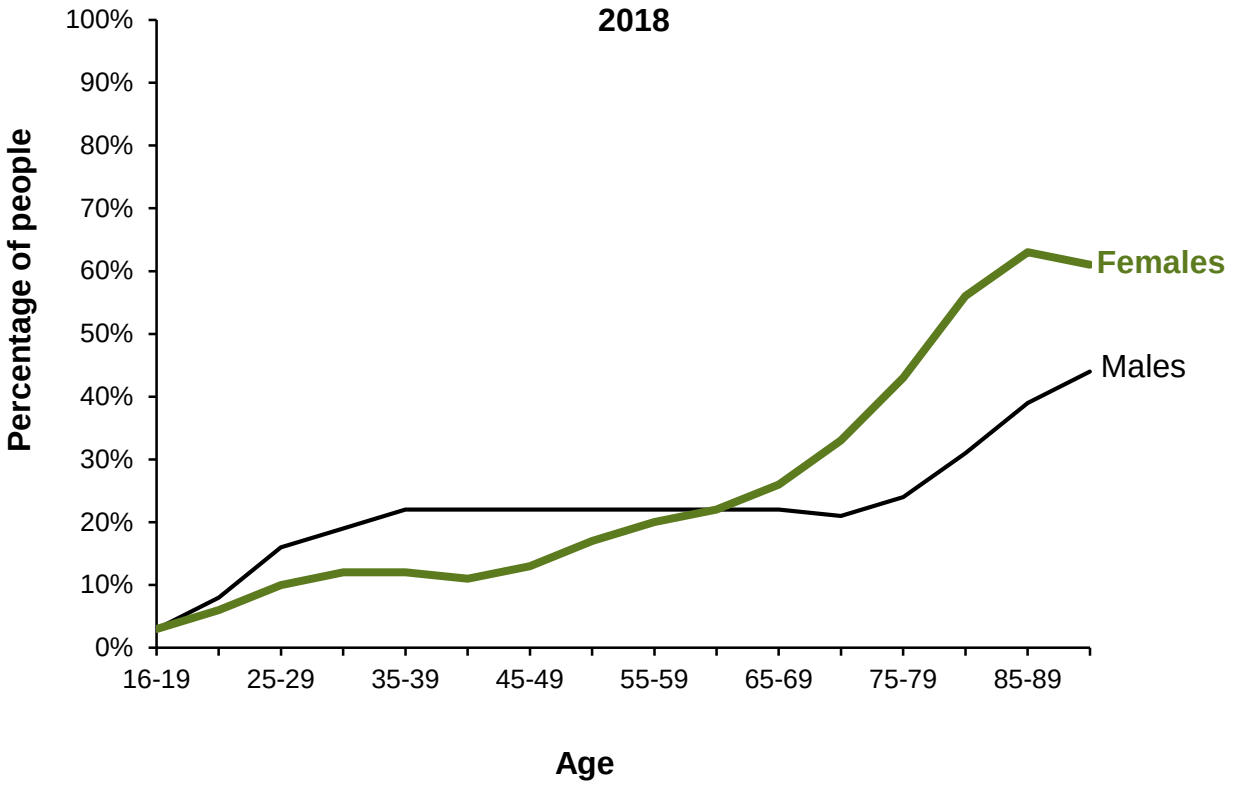
The gap between the average life expectancy of men and women in Scotland is decreasing[6]. This means that the number of older men is projected to increase more rapidly than the number of older women, which contributes to the projected increase in the total number of men living alone. In 2018, an estimated 113,800 men aged 65 and over were living alone. This is projected to increase to 139,500 in 2028 (an increase of 23%) and to 161,400 by 2043 (an increase of 42% compared with 2018). The number of women aged 65 and over living alone is projected to increase from 229,200 in 2018 to 245,900 in 2028 (increase of 16%) and to 326,900 by 2043 (an increase of 43% compared with 2018).

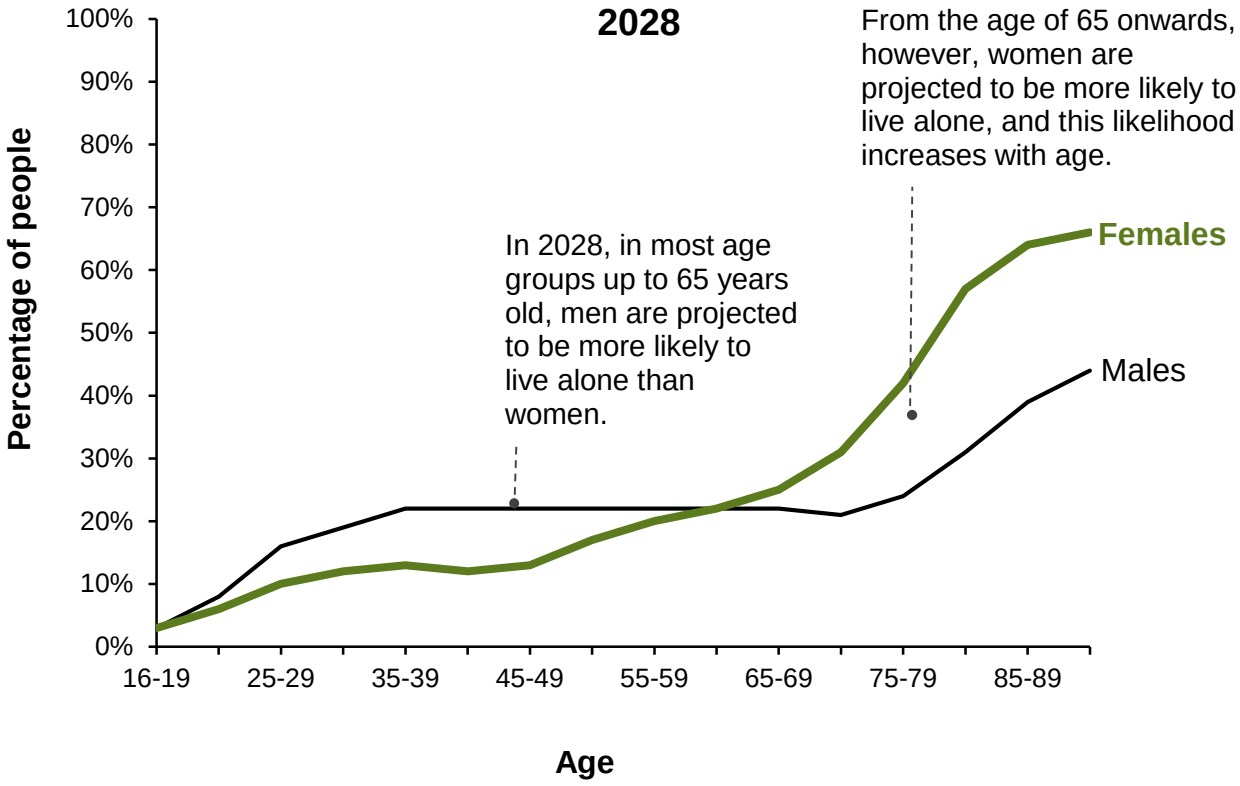
The number of men aged 85 and over living alone is projected to increase by just over a quarter (26%) between 2018 and 2028, increasing from 17,600 to 22,100; and to nearly double to 33,700 by 2043 (an increase of 92% compared with 2018). The number of women aged 85 and over living alone is also projected to increase from 49,700 in 2018 to 59,400 in 2028 (an increase of 20%) and then to 90,900 by 2043 (an increase of 83% compared with 2018). In 2028, 65% of women in this age group) are projected to live alone, compared to 39% of men.

The substantial projected increase in the number of older households, in particular of older people living alone, has implications for services and policies aimed at supporting older people.

6) Further information can be found in 'Life expectancy in Scotland, 2017-2019' on the NRS website.

Figure 9: Projected percentage of people living alone in 2018 and 2028, by age and sex





Numbers are given as a percentage of adults in age group, not as a percentage of households.

Households containing two or more adults without children

The number of two adult households without children is projected to rise by 7% between 2018 and 2028, from 774,700 to 830,600, and by 13% between 2018 and 2043 when they will total 830,600. However, the percentage of all households which contain just two adults remains relatively stable over the whole projection period at just under a third (31% to 32%).

The increase in the number of two adult households is mainly down to a large increase in those where the household reference person is aged 65 or over. This is a result of a projected increase in the population in this age group, as well as the narrowing of the gap between male and female life expectancy.

The number of two adult households where the household reference person (HRP) is aged 65 or over is projected to increase by 21% from 306,000 in 2018 to 370,700 in 2028, and then to 425,000 in 2043 (an increase of 39% compared with 2018). The proportion of two adult households where the HRP is aged 65 or over is projected to increase from 39% in 2018 to 45% in 2028, and then to 49% by 2043.

For two adult households where the HRP is aged 85 or over, the number is projected to increase from 26,400 in 2018 to 32,600 in 2028 (an increase of 24%) and then to 49,600 by 2043 (an increase of 88% compared with 2018).

The number of two adult households where the HRP is aged under 65 is projected to decrease overall by 2% between 2018 and 2028 (falling from 468,700 to 459,900) and then to 448,800 (a decrease of 4% compared with 2018). Between 2018 and 2028 the projected increases for households where the HRP is aged 30 to 44 or 60 to 64 are more than offset by decreases for other age groups.

The total number of households with three or more adults is projected to decrease by 3% between 2018 and 2028, falling from 210,600 to 203,000. It is then projected to recover in the later years of the projection period and reach 211,500 by 2043 (0.5% higher than in 2018). The number of 3+ adult households where the HRP is aged 65 or over is projected to increase by 18% between 2018 and 2028, increasing from 35,800 to 42,400. Three or more adult households as a proportion of all households are projected to be relatively stable at around 8% over the whole projection period.

Households with children

In 2018, 6% of all households were estimated to consist of one adult living with one or more children, and this proportion is projected to be relatively stable over the whole projection period to 2043. The total number of such households is projected to increase marginally from 154,400 in 2018 to 157,900 in 2028 (an increase of 2%) and then fall back a little to reach 153,300 by 2043 (a decrease of 1% compared with 2018). Most of the overall increase projected between 2018 and 2028 is accounted for by an 11% increase for households where the HRP is aged 35 to 44.

In 2018, 18% of all households contained two or more adults with children, a figure that is projected to fall to 17% in 2028 and then to 16% by 2043. The number of such households is projected to decrease from 445,200 in 2018 to 441,100 in 2028 (a decrease of 1%) and then to 438,400 by 2043 (a decrease of 2% compared with 2018). Between 2018 and 2028 there are increases in the numbers for household where the HRP is someone aged 35 to 44, but these are offset by decreases for households with HRPs in other age groups.

4. Household projections for council areas

Projection of household numbers across Scotland

The number of households is projected to increase in almost every council area between 2018 and 2028, as shown in Figure 10. The projected percentage change in the number of households between 2018 and 2028, and between 2018 and 2043, are shown in Figure 11. Information on the percentage change between 2018 and 2028 is also presented as a map in Figure 12.

The largest projected percentage increases in the number of households between 2018 and 2028 are in:

- Midlothian (16%)
- East Lothian (11%)
- City of Edinburgh (10%)
- West Lothian (10%).

In contrast, household numbers are projected to fall between 2018 and 2028 in:

- Inverclyde (3%)
- Argyll and Bute (2%)
- Na-h Eileanan Siar (2%)
- North Ayrshire (0.1%).

Over a longer projection period (2018 to 2043) the largest projected percentage increases in the numbers of households are in:

- Midlothian (38%)
- East Lothian (24%)
- City of Edinburgh (21%)
- West Lothian (21%).

Decreases in household numbers between 2018 and 2043 are projected in:

- Na-h Eileanan Siar (11%)
- Inverclyde (10%)
- Argyll and Bute (8%)
- North Ayrshire (3%)
- West Dunbartonshire (0.9%)
- Dumfries and Galloway (0.8%)
- East Ayrshire (0.3%).

The changes in household numbers can be compared to the changes in the projected population for each Council area, between 2018 and 2028[7]. The projected population changes range from falls of 6% for Inverclyde and Na h-Eileanan Siar to an increase of 14% for Midlothian. Although 14 Council areas are projected to have a decline in their population over this period, only four are also projected to experience a decline in household numbers. This difference is a result of people becoming increasingly likely to live in smaller households, as discussed in Section 3 - Projected changes in household type.

7) The projected percentage change in the population for each Council area is published in Table 3 of the 2018-based Population Projections for Scottish areas on the NRS website.

Figure 10: Projected number of households by council area, 2018 and 2028

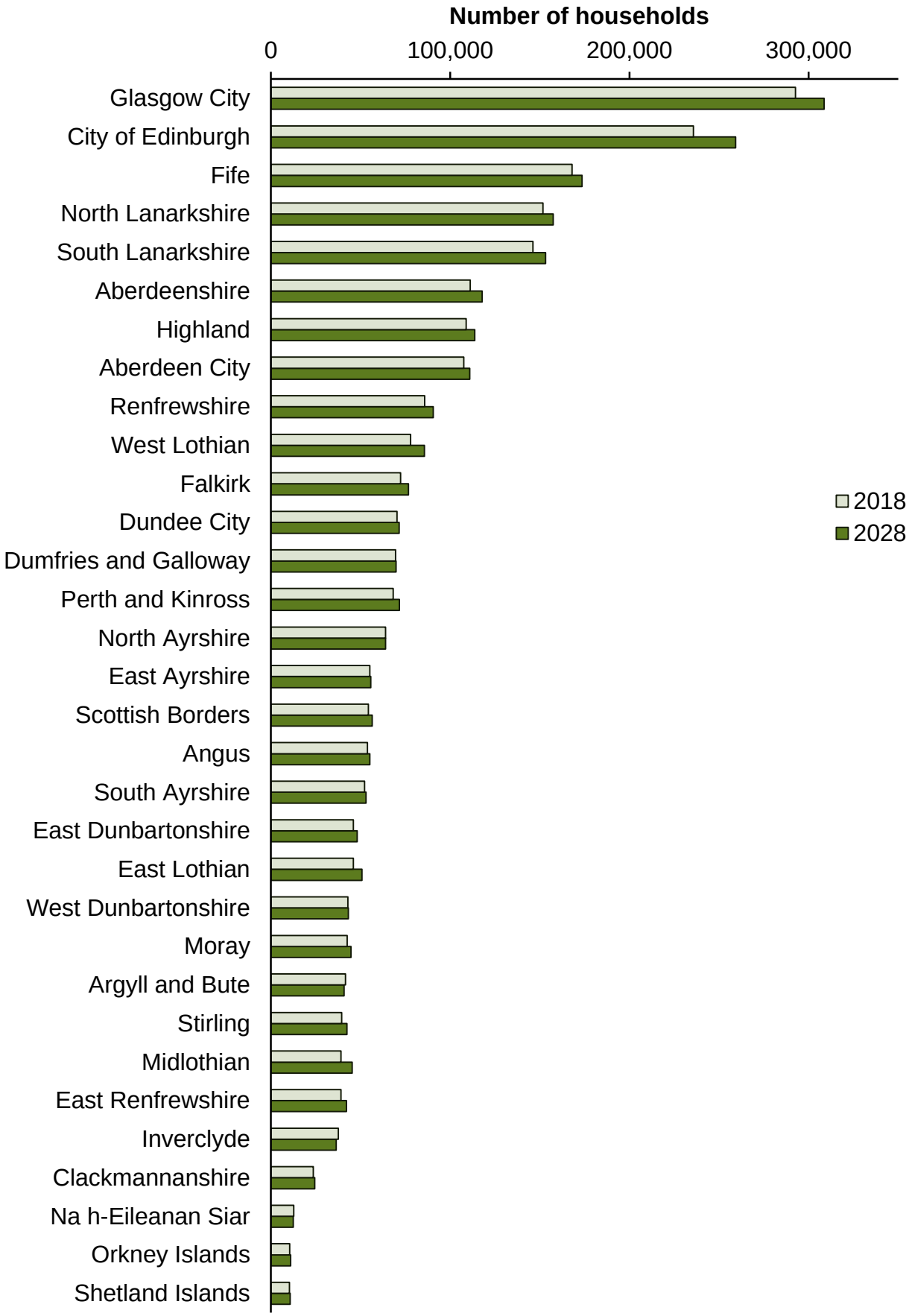


Figure 11: Projected percentage change in the number of households by council area, 2018 to 2028 and 2018 to 2043

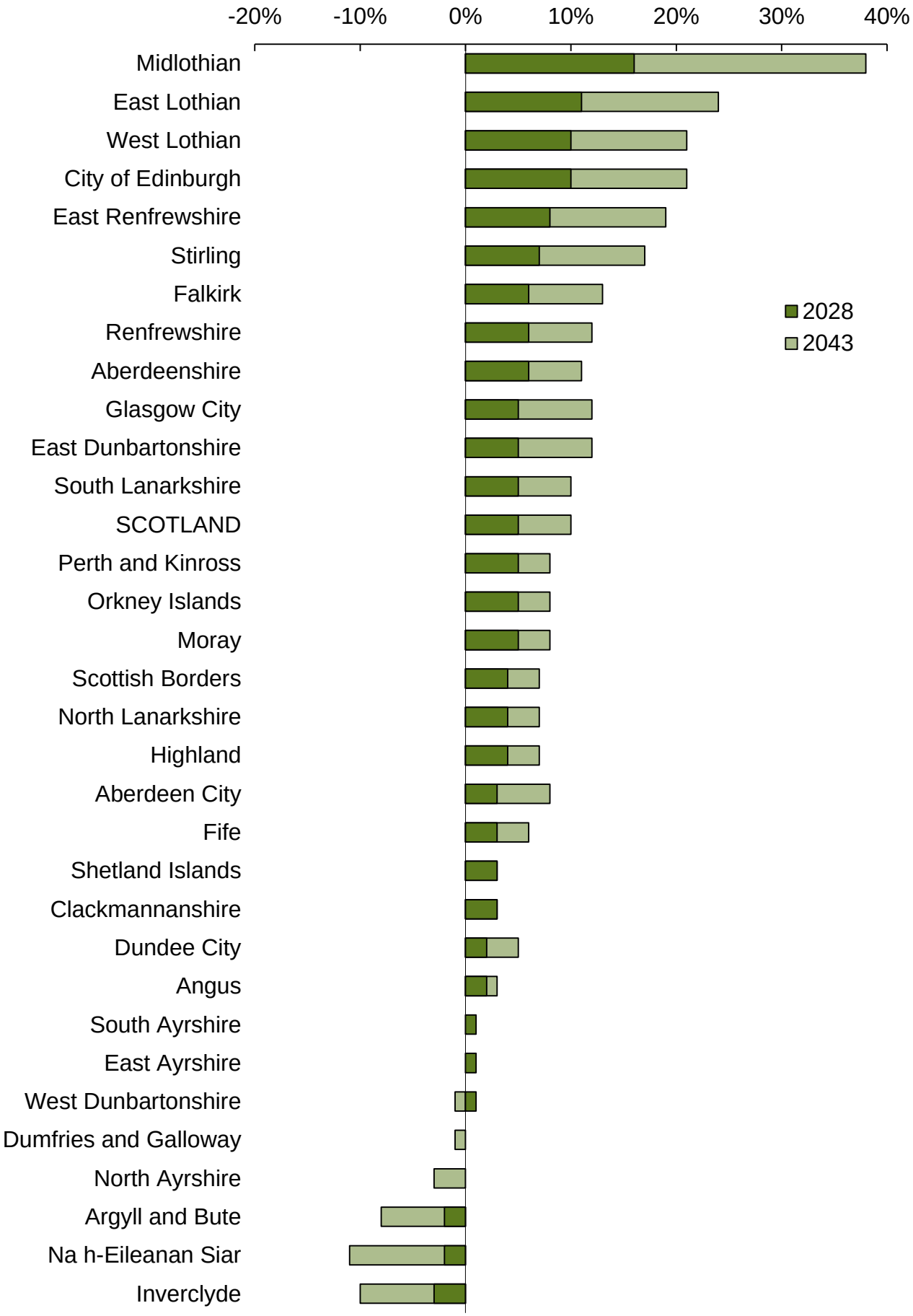
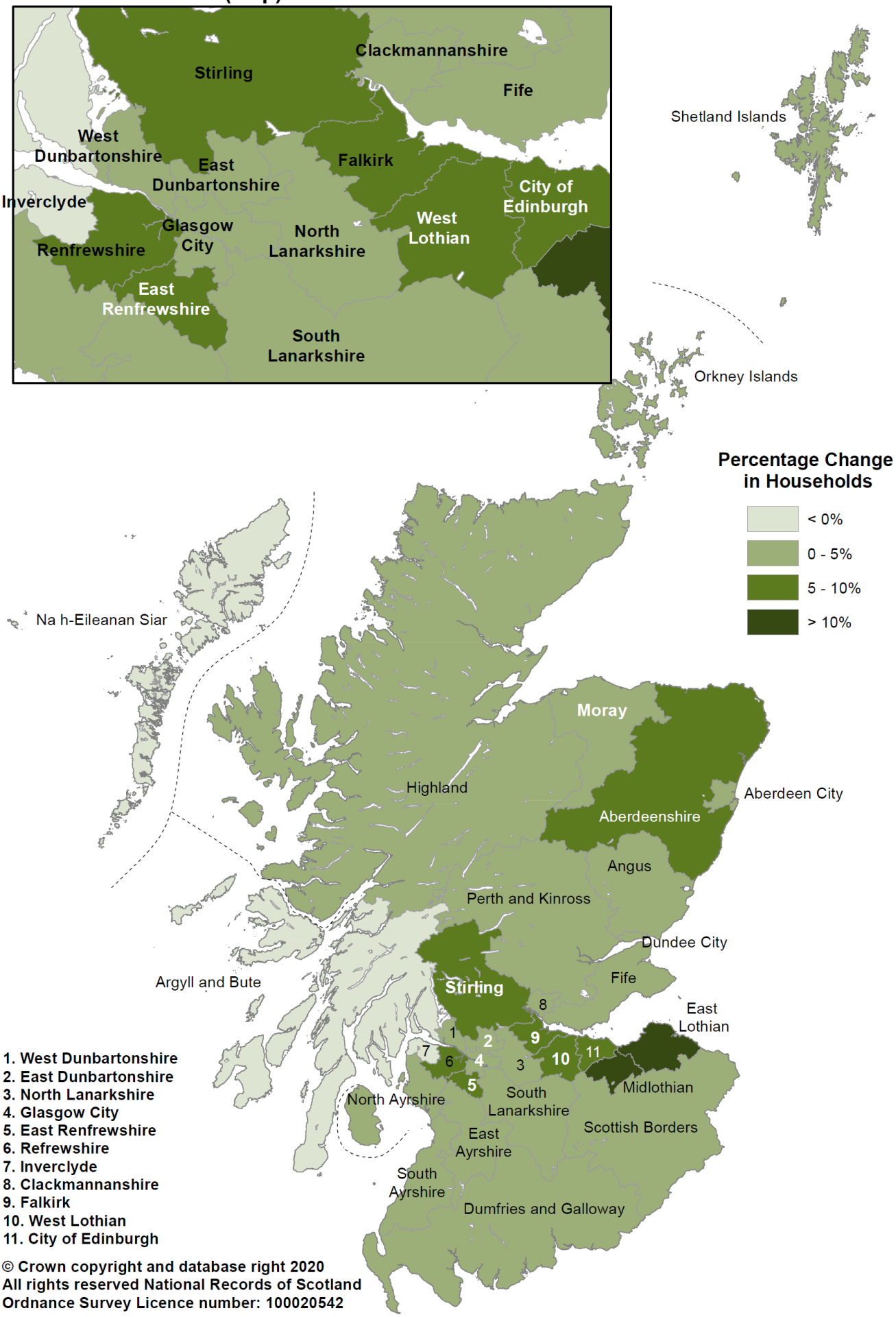
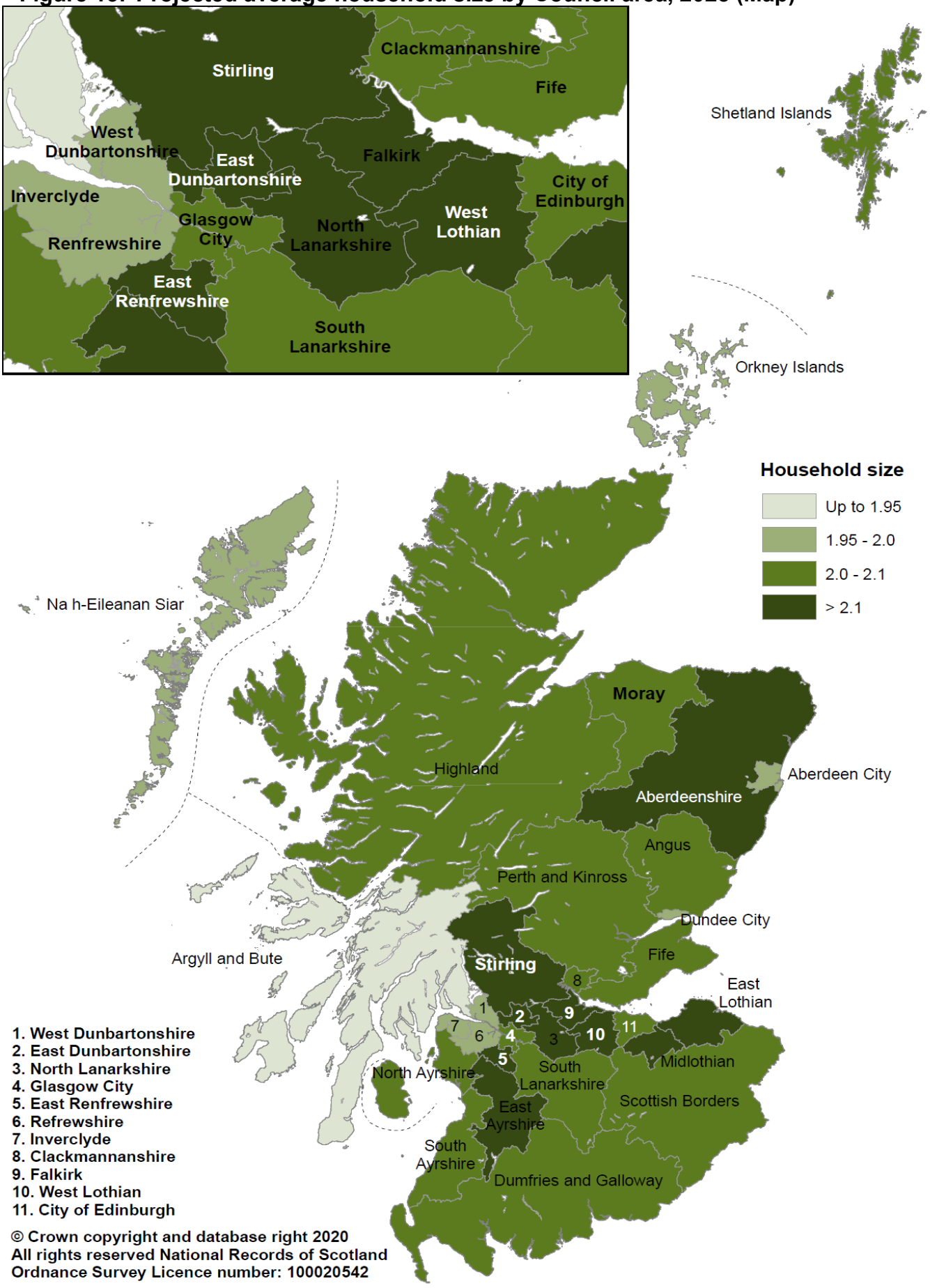


Figure 12: Projected percentage change in households by Council area, between 2018 and 2028 (Map)



The Council areas with the largest projected average household size (number of people per household) in 2028 are East Renfrewshire (2.38), East Dunbartonshire (2.30) and Aberdeenshire (2.25). The areas with the smallest projected average household size are Argyll and Bute (1.91) and Aberdeen City, Inverclyde and Renfrewshire (all 1.98). The average household size is projected to be two people or less for 11 of the 32 Council areas by 2028. Figure 13 is a map showing the average household size for each Council area in 2028. It shows that the areas with the largest average household sizes (over 2.10) tend to be adjacent to the cities which have low average household sizes. This is related to the different population and household structure of these areas, as young people move to the cities for work or study, and then people are more likely to move to surrounding Council areas as their families grow, for example as people form couples and have children.

Figure 13: Projected average household size by Council area, 2028 (Map)



Council areas: Type of household

One adult households

In every Council area there is a projected increase in the number of people living alone between 2018 and 2028, ranging from a 2% increase in Argyll and Bute to a 19% increase in Midlothian. The map in Figure 14 shows the projected age ratio of adults in households which contain just one adult (and no children), in each Council area in 2028.

By 2028, 45% of households in Glasgow City are projected to be single adult households, compared to the Scottish average of 37%. The lowest percentage of single adult households is projected to be in Aberdeenshire and Midlothian (both 29%). In general, the figures are highest in the cities and in the west of the country.

Households containing two or more adults without children

There is a projected increase in two adult households between 2018 and 2028 in all Council areas. In percentage terms the increases range from 1% in Dundee City to 16% in Midlothian. The proportion of households consisting of two adults but no children in 2028 is projected to vary from 26% in Renfrewshire to 37% in Aberdeenshire and Perth and Kinross, compared to a Scottish average of 32%.

In contrast, there are projected reductions between 2018 and 2028 in the number of three or more adult households in all Council areas apart from City of Edinburgh, East Lothian, Midlothian, Stirling and West Lothian (where increases of 5% or less are projected). Dumfries and Galloway is projected to experience the largest (11%) percentage decrease. The percentage of households of this type projected for each Council area in 2028 ranges from 6% (Scottish Borders) to 11% (East Dunbartonshire), around a Scottish average of 8%.

Households containing children

The overall number of households containing children is projected to fall very slightly (by 0.1%) in Scotland as a whole. The number of such households containing just one adult is projected to increase by 2%, whereas the number containing two or more adults is projected to fall by 1%.

The majority of Council areas are projected to see an increase in the number of households consisting of one adult with one or more children between 2018 and 2028. The percentage increases range from 0.3% in Perth and Kinross to 15% in Midlothian. In the other (13) Council areas, the projected decreases are generally 3% or less, but decreases of 9% and 7% are projected for Argyll and Bute and Inverclyde respectively. This type of household is projected to comprise 6% of all households in 2028 for Scotland as a whole, ranging from 3% in Aberdeenshire to 8% in Dundee City, North Lanarkshire, West Dunbartonshire and West Lothian.

The number of households containing two or more adults with children is projected to decrease nationally by 1% between 2018 and 2028, with decreases projected for the majority of Council areas. Increases are projected for 9 Council areas over this period, including the city Council areas, East Lothian, East Renfrewshire, Midlothian, Stirling and West Lothian. Nationally this type of household is projected to comprise 17% of all households in 2028, ranging from 13% in Argyll and Bute to 23% in East Renfrewshire and Midlothian.

Figure 15 shows the projected percentage of households with children (regardless of the number of adults) in each Council area in 2028. In general, it is the Council areas which are reasonably close to the main cities which have the highest percentages of households with children. The

figures are lower in the cities themselves, and in the more remote rural and island Council areas. Aberdeenshire, East Dunbartonshire, East Lothian, East Renfrewshire, Midlothian, North Lanarkshire and West Lothian have the highest proportions of households containing children, at around 26% to 29% of all households. Argyll and Bute has the smallest (18%) proportion.

Figure 14: Projected age ratio of adults in households containing one adult with no children by Council area, 2028 (Map)

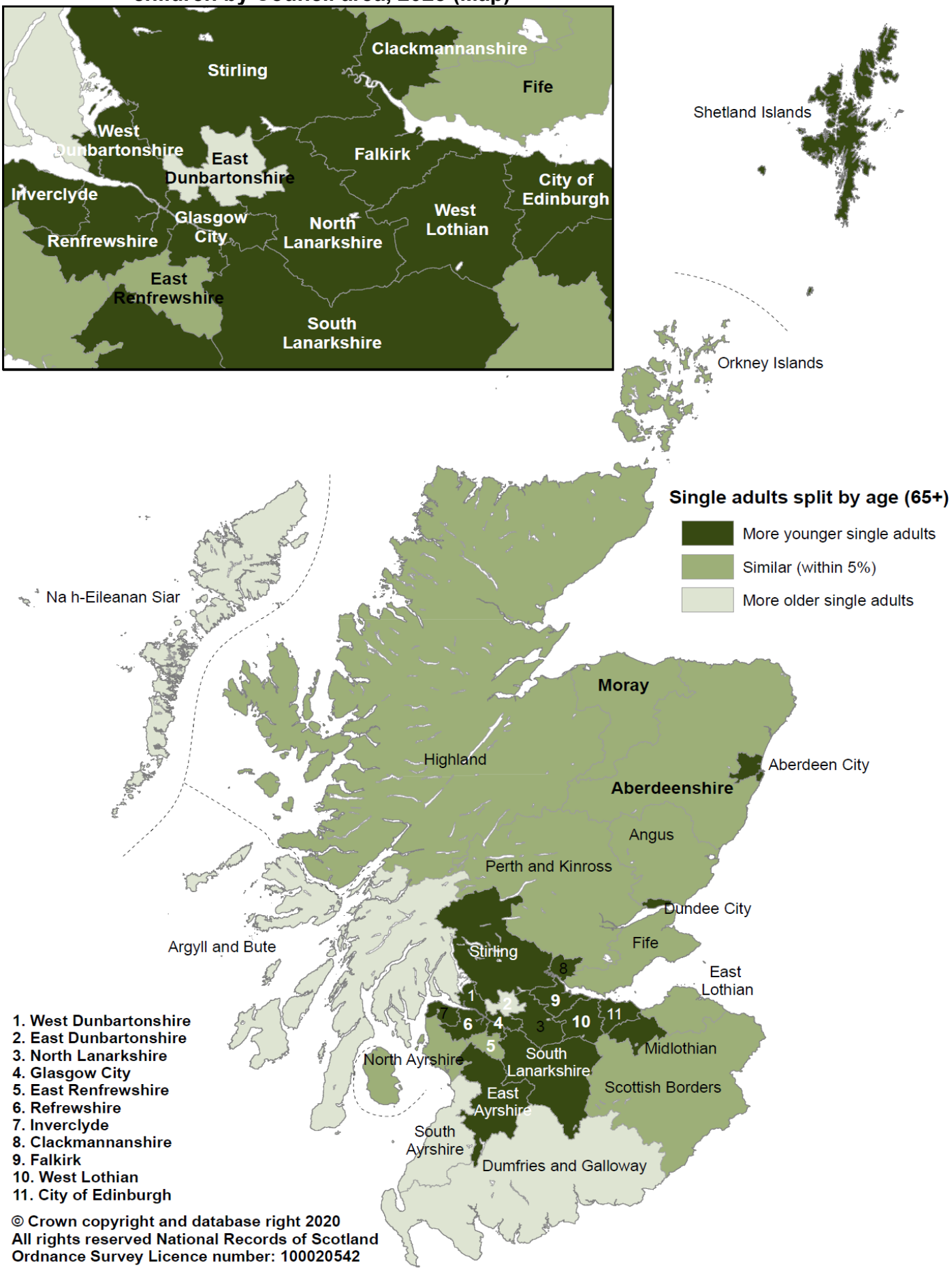
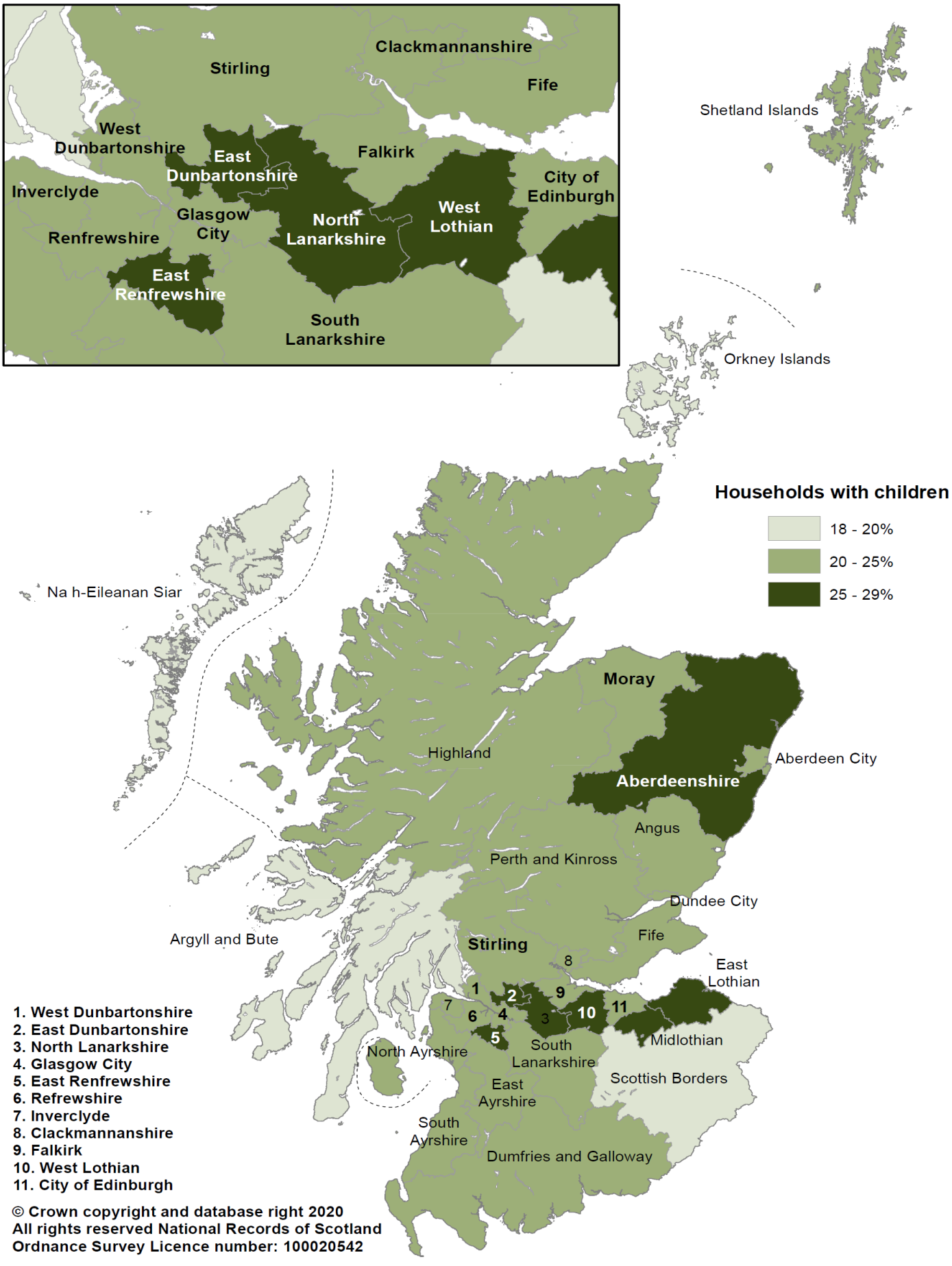


Figure 15: Projected percentage of households with children by Council area, 2028 (Map)



Council areas: Age of household reference person

Between 2018 and 2028, nearly all Council areas are projected to see marked increases in the number of households where the household reference person (HRP) is aged 60 or over: the overall increase is 13% for households with a HRP aged 60 to 74, and 28% for households where the HRP is aged 75 or over. Households with a HRP aged 30-44 are also projected to increase by 10% over this period. In contrast, decreases of 11% are projected for numbers of households where the HRP is aged 16-29 or 45-59.

In terms of how these changes vary by council area, the key points for each age group of HRP are:

HRP aged 16-29:

- Decreases are projected in all Council areas, ranging from 0.3% in East Renfrewshire to 16% in Aberdeen City.
- These households are projected to account for 9% of all households in 2028. This projected proportion is relatively high in the city Council areas of Aberdeen (13%), Dundee (15%), Edinburgh (12%) and Glasgow (13%), and relatively low (5% or less) in Aberdeenshire, East Dunbartonshire and North Lanarkshire.

HRP aged 30-44:

- Increases are projected in nearly all Council areas, ranging from 1% in Aberdeenshire and South Ayrshire to 29% in Midlothian. Only Argyll and Bute and Na h-Eileanan Siar are projected to have decreases, of 6% and 8% respectively.
- These households are projected to account for 25% of all households in 2028. This projected proportion is relatively high (29% or more) in Angus, Dumfries and Galloway, East Dunbartonshire, Highland and Na h-Eileanan Siar, all of which are more rural in nature.

HRP aged 45-59:

- Decreases are projected in nearly all Council areas, ranging from 3% in Aberdeen City to 24% in Inverclyde. Only City of Edinburgh and Midlothian are projected to have increases, of 3% and 0.4% respectively.
- These households are projected to account for 25% of all households in 2028, with relatively little variation in this proportion across Council areas.

HRP aged 60-74:

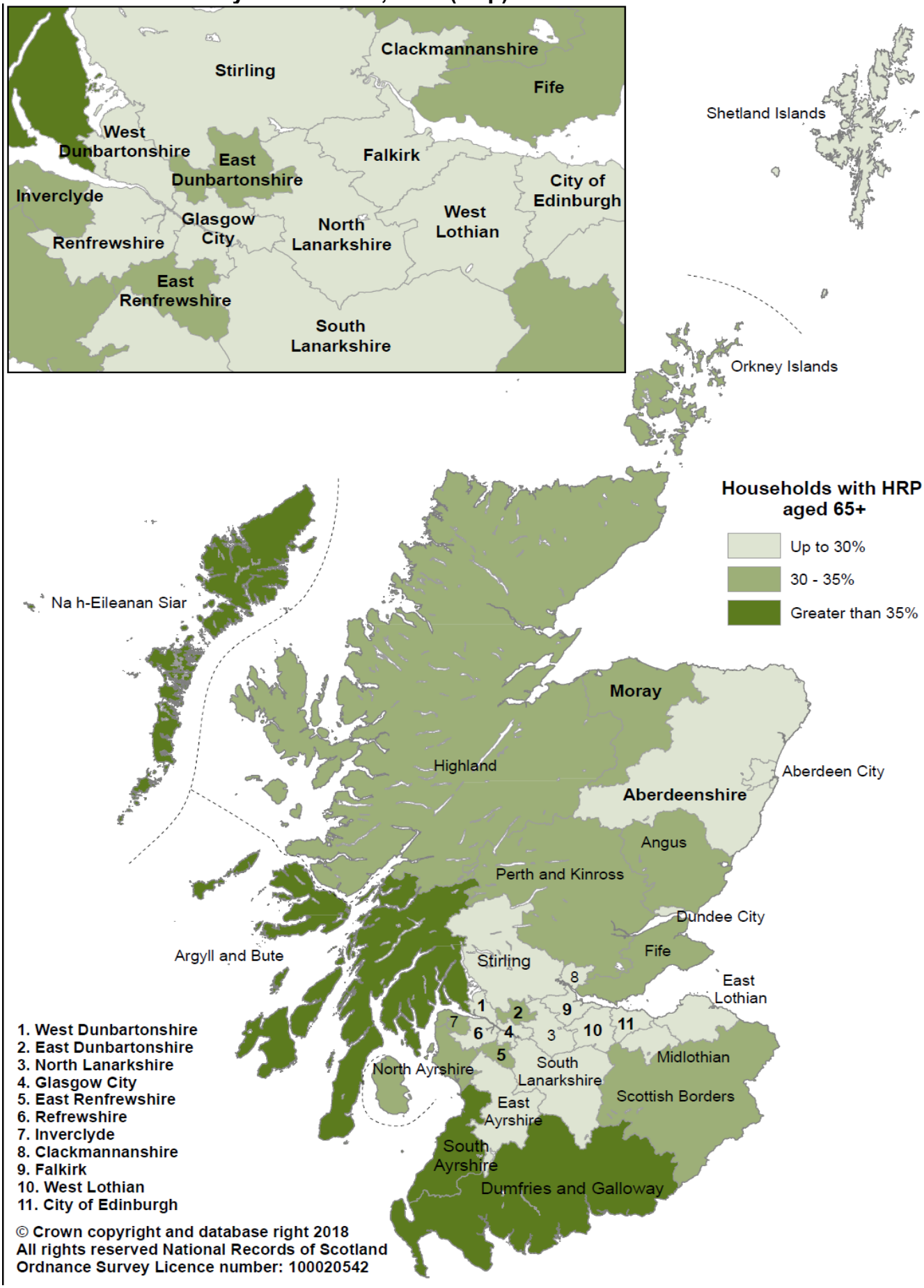
- Increases are projected in nearly all Council areas, ranging from 3% in Angus to 23% in Glasgow City. Only Na h-Eileanan Siar is projected to have a small decrease, of 1%.
- These households are projected to account for 23% of all households in 2028. This projected proportion is relatively low (20% or less) in the city Council areas; it is highest in Argyll and Bute (30%) and in Dumfries and Galloway and Inverclyde (both 28%).

HRP aged 75 or over:

- Large increases are projected in all Council areas: only in Aberdeen City (19%), Dundee City (10%), Glasgow City (6%) and Inverclyde (18%) is the projected percentage increase less than 20%. The highest projected increase is 44% in Clackmannanshire and Midlothian.
- These households are projected to account for 18% of all households in 2028. This projected proportion is lowest in the city Council areas of Aberdeen (14%), Dundee (14%), Edinburgh (13%) and Glasgow (10%), and highest in Argyll and Bute and Dumfries and Galloway (both 25%) and in Perth and Kinross and Orkney Islands (both 24%).

Figure 16 shows the projected percentage of households with a household reference person aged 65 or over in 2028. In general terms this proportion is highest in the more rural areas such as Argyll and Bute, Dumfries and Galloway and Na h-Eileanan Siar. It is lowest in the more urban areas such as in the cities and in Council areas in the central belt.

Figure 16: Projected percentage of households with household reference person aged 65 or over by council area, 2028 (Map)



5. Household projections for other areas

National Parks: Overall number of households

National Parks are protected areas of countryside, wildlife and cultural heritage. There are currently two National Parks in Scotland: Cairngorms National Park and Loch Lomond and the Trossachs National Park.

The number of households in Cairngorms National Park (CNP) is projected to rise from 8,700 in 2018 to 9,400 in 2028, an increase of 8%. The number of households in Loch Lomond and the Trossachs National Park (LLTNP) is also projected to grow by 2% over this period, increasing from 6,700 to 6,800.

The population of CNP is projected to increase by 3% over the period 2018 to 2028, and that of LLTNP to decrease by 3%. (Figure 17). As a consequence, the average number of people per household ('household size') is projected to decrease from 2.12 to 2.02 in CNP, and 2.13 to 2.02 in LLTNP. The number of households containing just one adult is projected to rise by 12% between 2018 and 2028 in CNP, and by 8% in LLTNP (Figure 18). Similarly, the proportion of people aged 16 or over living alone is projected to increase from 17% to 18% in both CNP and LLTNP areas, (Figure 19).

In both CNP and LLTNP the overall increase projected between 2018 and 2028 in the number of households is driven by increases in the number of one adult or two adult households without children. The number of households of other types are projected to remain unchanged or to decrease (Figure 18).

National Parks: Type of household and age of household reference person

These changes in household type and size are down in a large part to the ageing population. As the number of older people in the population increases, the number of households headed by older people will also increase. Figure 19 shows the changes between 2018 and 2028 in number of households by age of the household reference person (HRP) are projected to follow similar patterns in each National Park area. For instance, the number of households with an HRP aged 65 or over is projected to increase by 27% (from 3,000 to 3,800) in CNP, and by 24% (from 2,500 to 3,100) in LLTNP. The proportion such households represent of all households is also projected to increase between 2018 and 2028 (Figure 21).

Figure 17: Projected population and household change in each NP and SDP area, between 2018 and 2028

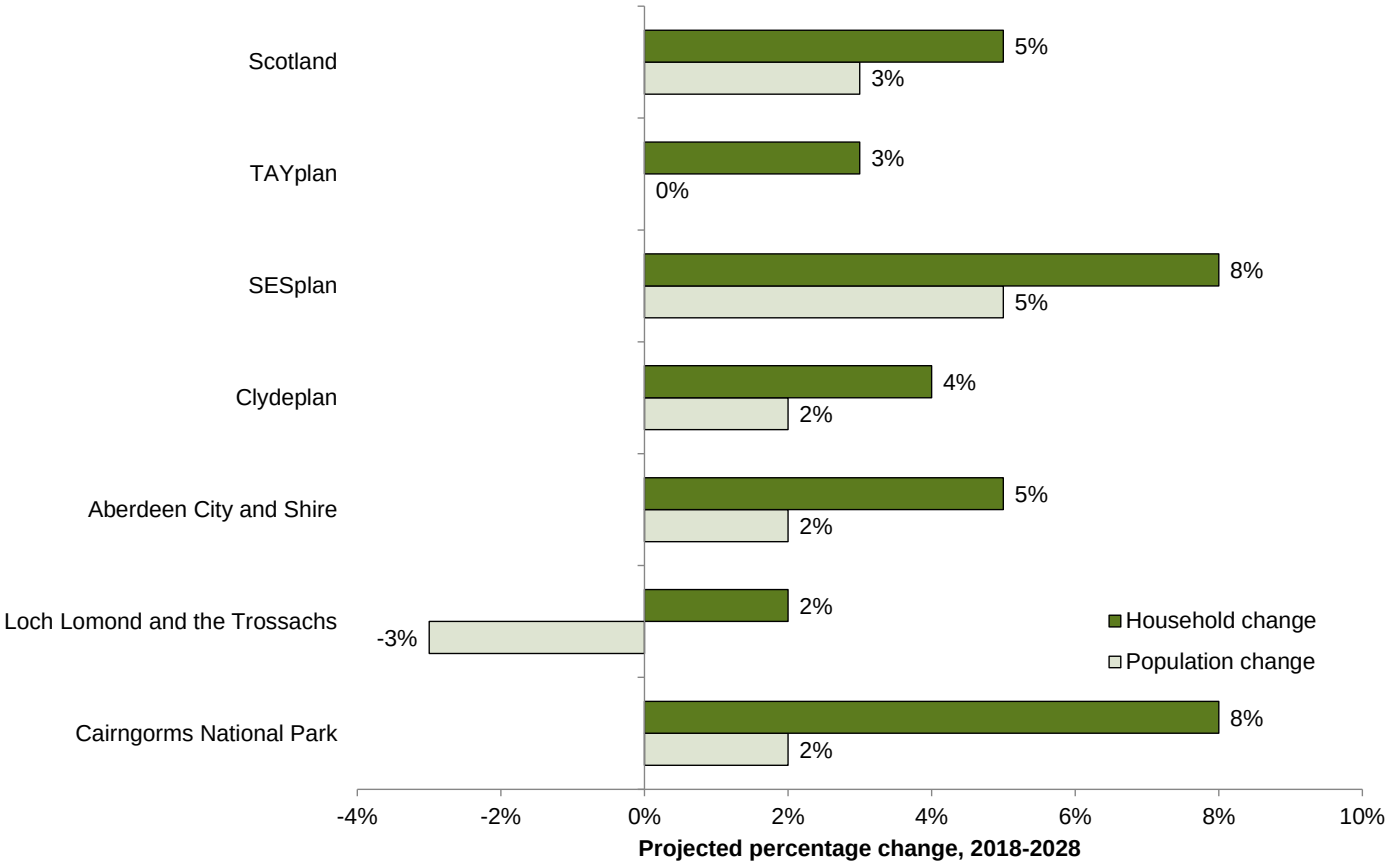


Figure 18: Projected number of households in Scotland's National Parks, by household type, 2018 and 2028

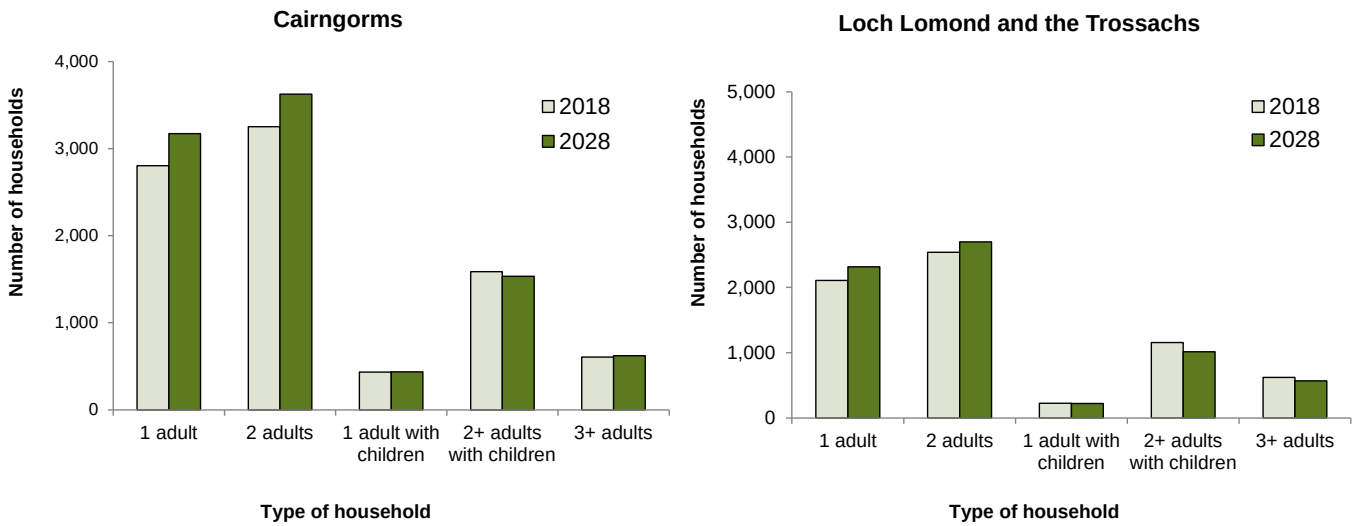
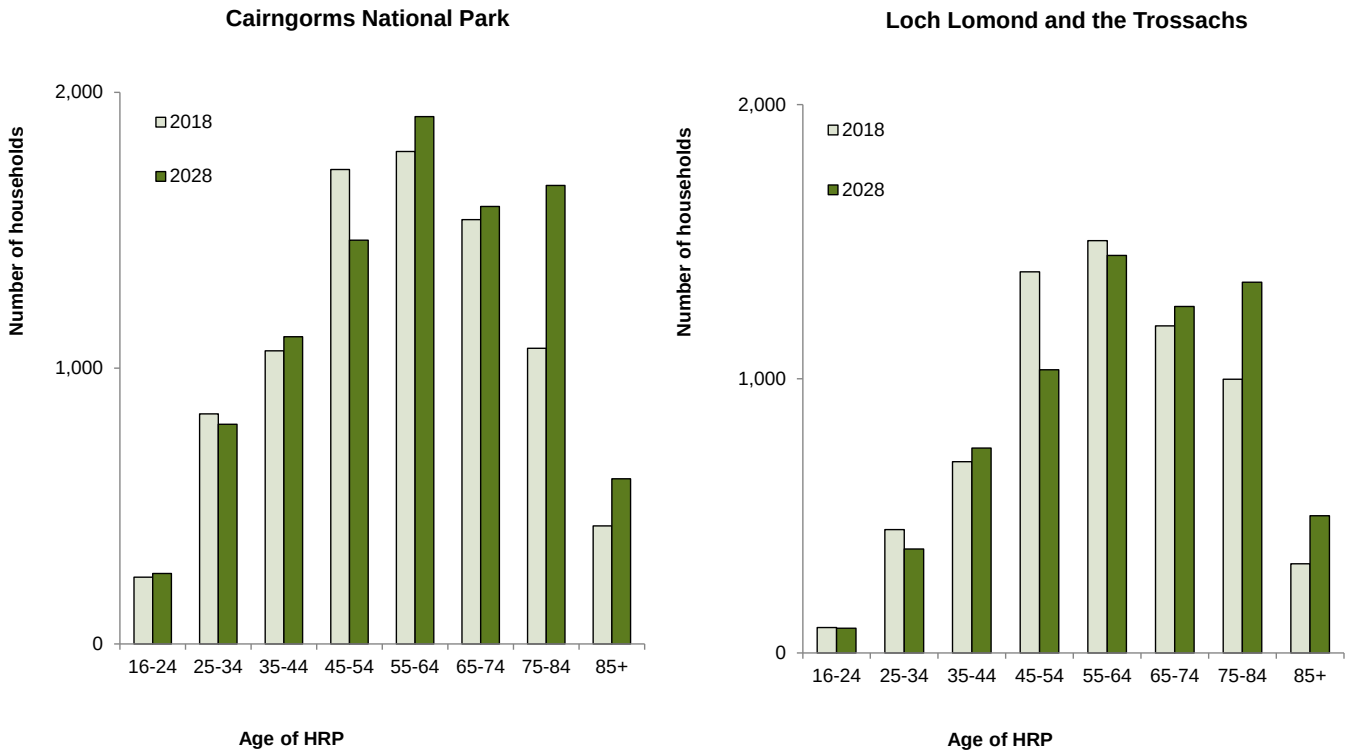


Figure 19: Projected number of households in Scotland's National Parks, by age of household reference person (HRP), 2018 and 2028



Household projections for Strategic Development Plan areas

There are four **Strategic Development Plan (SDP) areas** in Scotland based on the four largest city regions:

- Aberdeen (Aberdeen City and Shire)
- Dundee (Dundee, Perth, Angus and North Fife - TAYplan)
- Edinburgh (Edinburgh and South East Scotland - SESplan)
- Glasgow (Glasgow and the Clyde Valley - Clydeplan)

All SDP areas show projected increases in the number of households between 2018 and 2028. These increases range from 3 per cent in the TAYplan area to 8 per cent in the SESplan area.

Much of this increase is driven by increases in the numbers of 1 or 2 adult households without children, and by an ageing population. For example, the number of single person households is projected to increase by between 4% (TAYplan) and 8% (SESplan). The proportion of people aged 16 or over living alone is projected to increase slightly in each SDP area, (Figure 20). The number of households with a household reference person aged 65 or over is projected to increase by around a fifth in each SDP area. The proportion such households represent of all households is also projected to increase between 2018 and 2028 (Figure 21).

Figure 20: Summary of projected percentage of people living alone in each NP and SDP area, 2018 and 2028

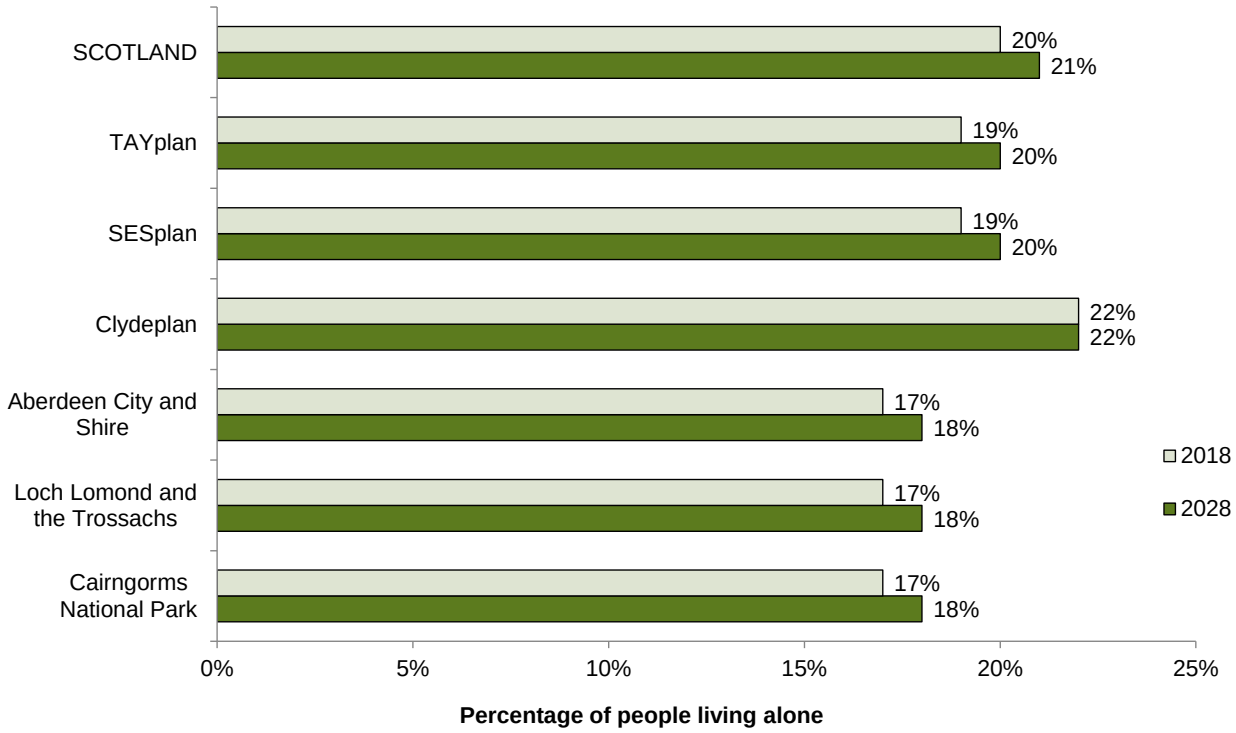
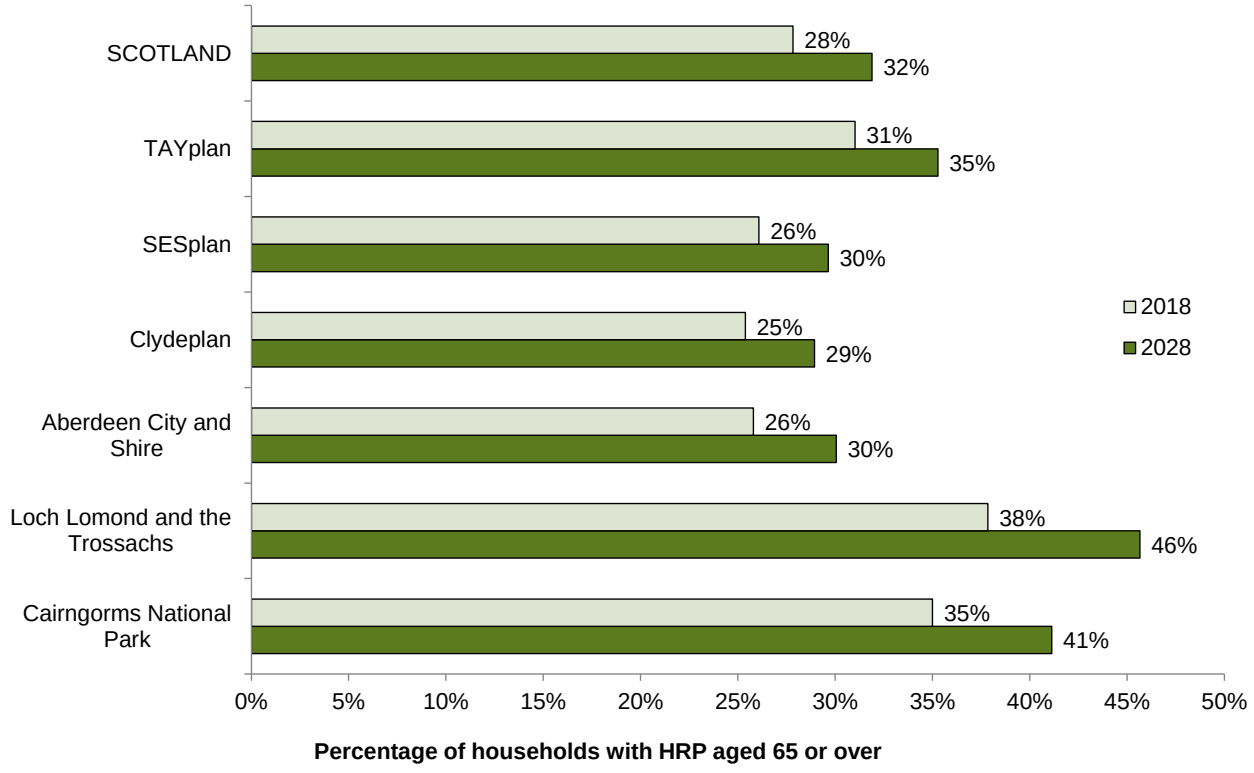


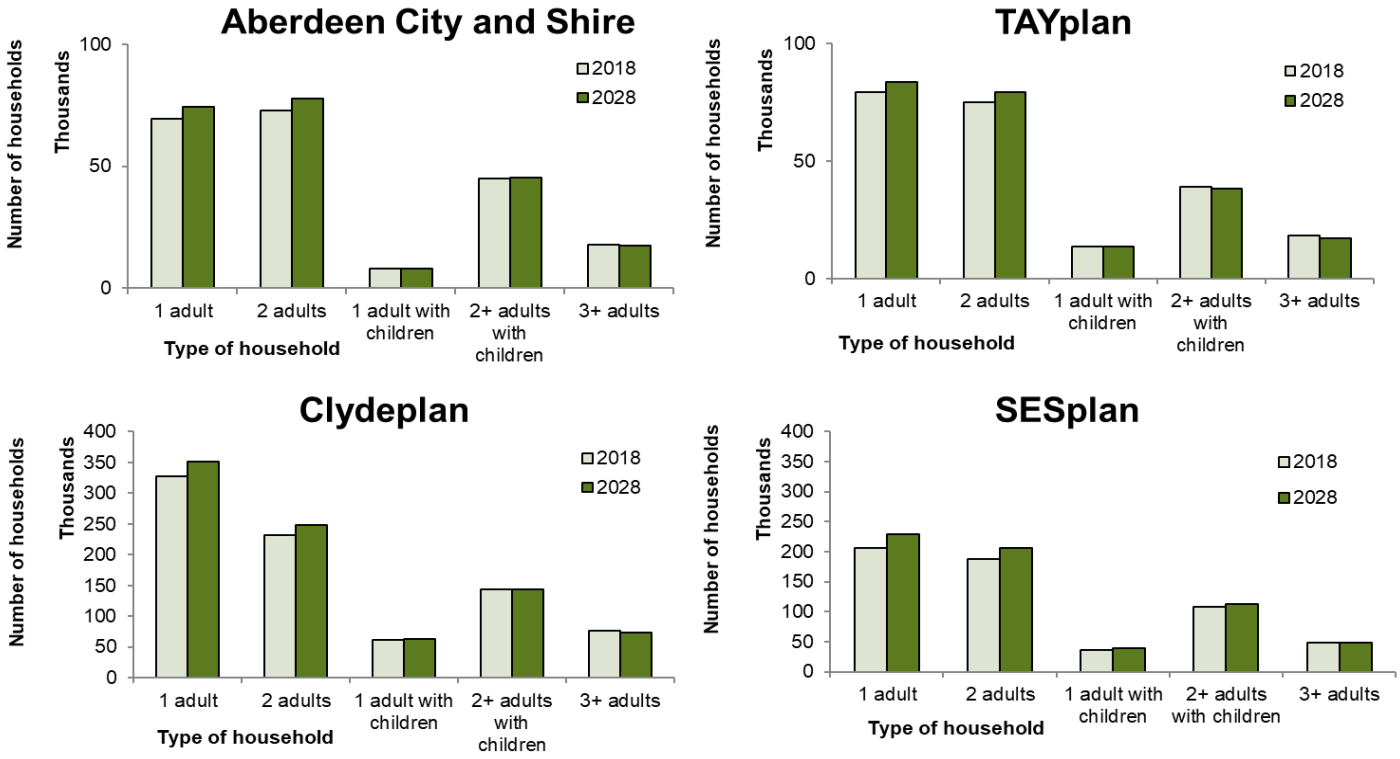
Figure 21: Percentage of households with a household reference person (HRP) aged 65 or over in each NP and SDP area, 2018 and 2028



The populations of the Aberdeen City and Shire, Clydepan and SESplan areas are all projected to increase between 2018 and 2028, by 2%, 2% and 5% respectively. The population of the TAYplan area is projected to decrease very marginally (Figure 17). As a consequence, the average household size is projected to decrease in each SDP area.

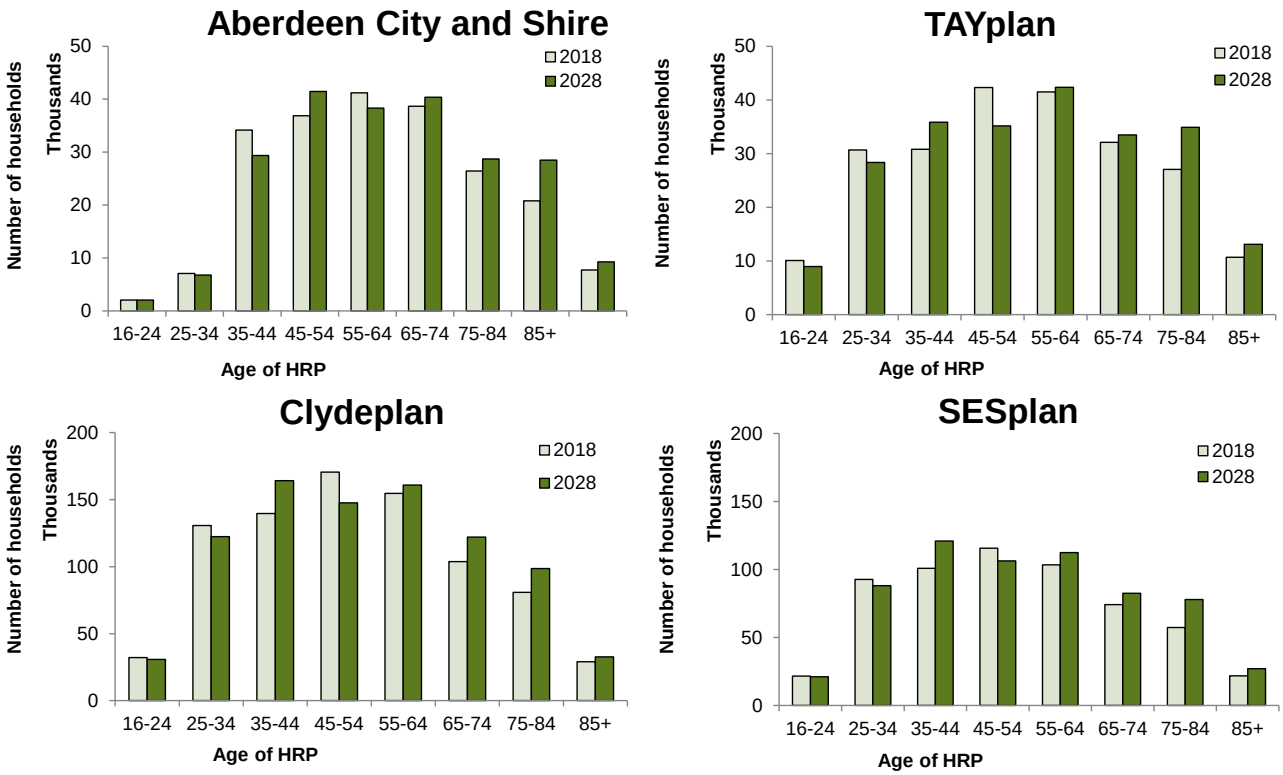
Changes between 2018 and 2028 in the number of households in each SDP area are illustrated in Figure 22 (change by household type) and Figure 23 (change by age of household reference person). More detailed data on the household projections for these areas over the whole projection period through to 2043 are included in the Data tables for this publication.

Figure 22: Projected number of households in Strategic Development Plan areas, by household type, 2018 and 2028



Note: Different scales are used on the vertical axis for each SDP area.

Figure 23: Projected number of households in Strategic Development Plan areas, by age of household reference person (HRP), 2018 and 2028



Note: Different scales are used on the vertical axis for each SDP area

6. Variant household projections

All statistics in this bulletin are from the main (principal) household projection. This is based on the principal population projection produced by the National Records of Scotland (NRS), which uses assumptions about fertility, mortality and migration which are thought to be the most likely to occur over the next 25 years. However, we have also published a range of variant projections. These are:

- a high international migration variant
- a low international migration variant
- a variant which uses household representative rates (HRR) projected through to 2043 (the principal projection holds the HRR constant from 2022)

The first two of these variants provide an indication of the future number of households in Scotland under a range of alternative assumptions on migration, while the third allows us to see the potential effect on household formation if the recent trends we have observed continue beyond the point assumed for the principal projection. Detailed data tables for each variant, by Council, National Park and Strategic Development Plan area, are available from the NRS website.

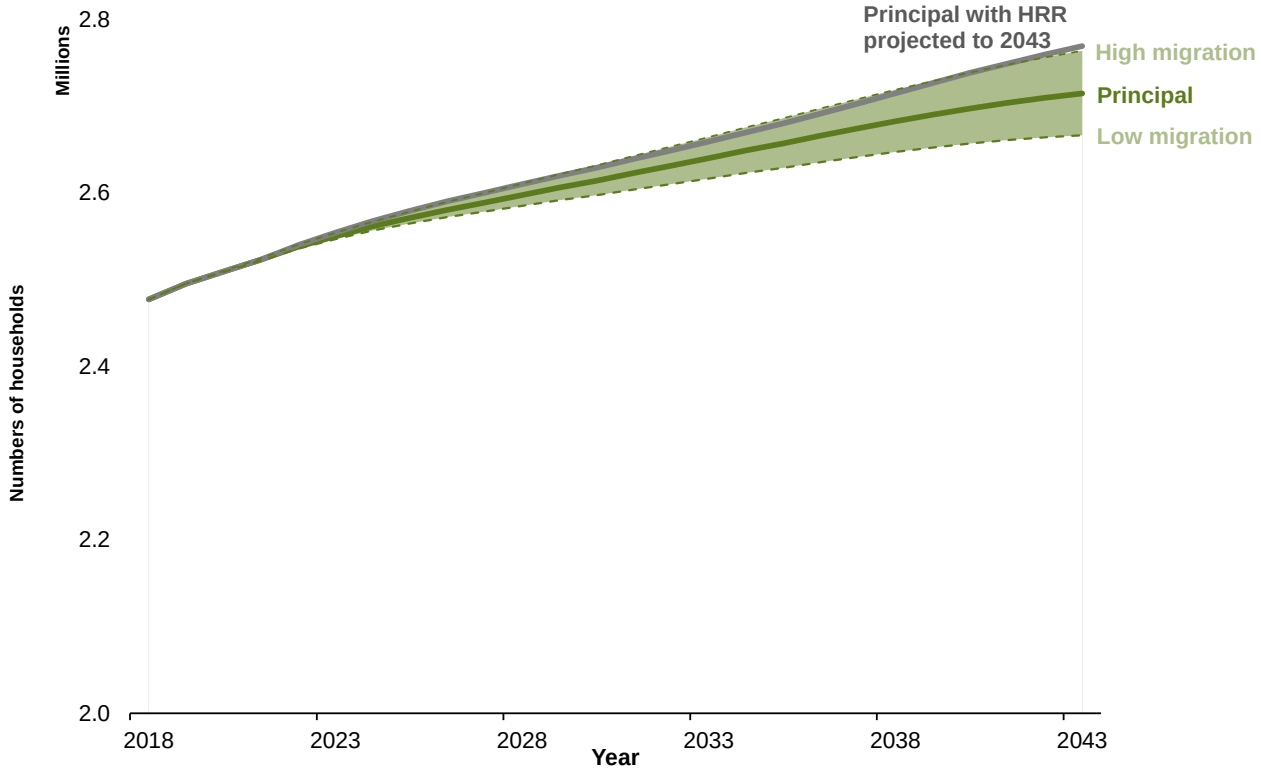
Variation in migration assumptions

The low and high migration variant population projections use the same assumptions about fertility and mortality as the principal population projection but assume varied levels of migration to and from Scotland. A description of the migration assumptions can be found in section 4 of the 2018-based population projections for Scotland on the NRS website.

Migration variant household projections are calculated by replacing the principal population projection with a variant migration population projection, keeping all other inputs to the household projections (communal establishment rates, headship rates and household estimates) unchanged.

Figure 24 illustrates how the variant household projections compare with the principal projection. The principal projection shows the number of households in Scotland increasing from 2.45 million households in 2018 to 2.71 million households in 2043. This latter number compares to 2.67 million households for the low migration variant, 2.76 million households for the high migration variant and 2.77 million households for the variant which projects HRR through to 2043. The percentage increase in households between 2018 and 2043 is 10% for the principal projection. This compares with 8% for the low migration variant, 12% for the high migration variant and the variant which projects HRR through to 2043.

Figure 24: Projected number of households in Scotland, 2018 to 2043: 2018-based principal and variant projections[8]



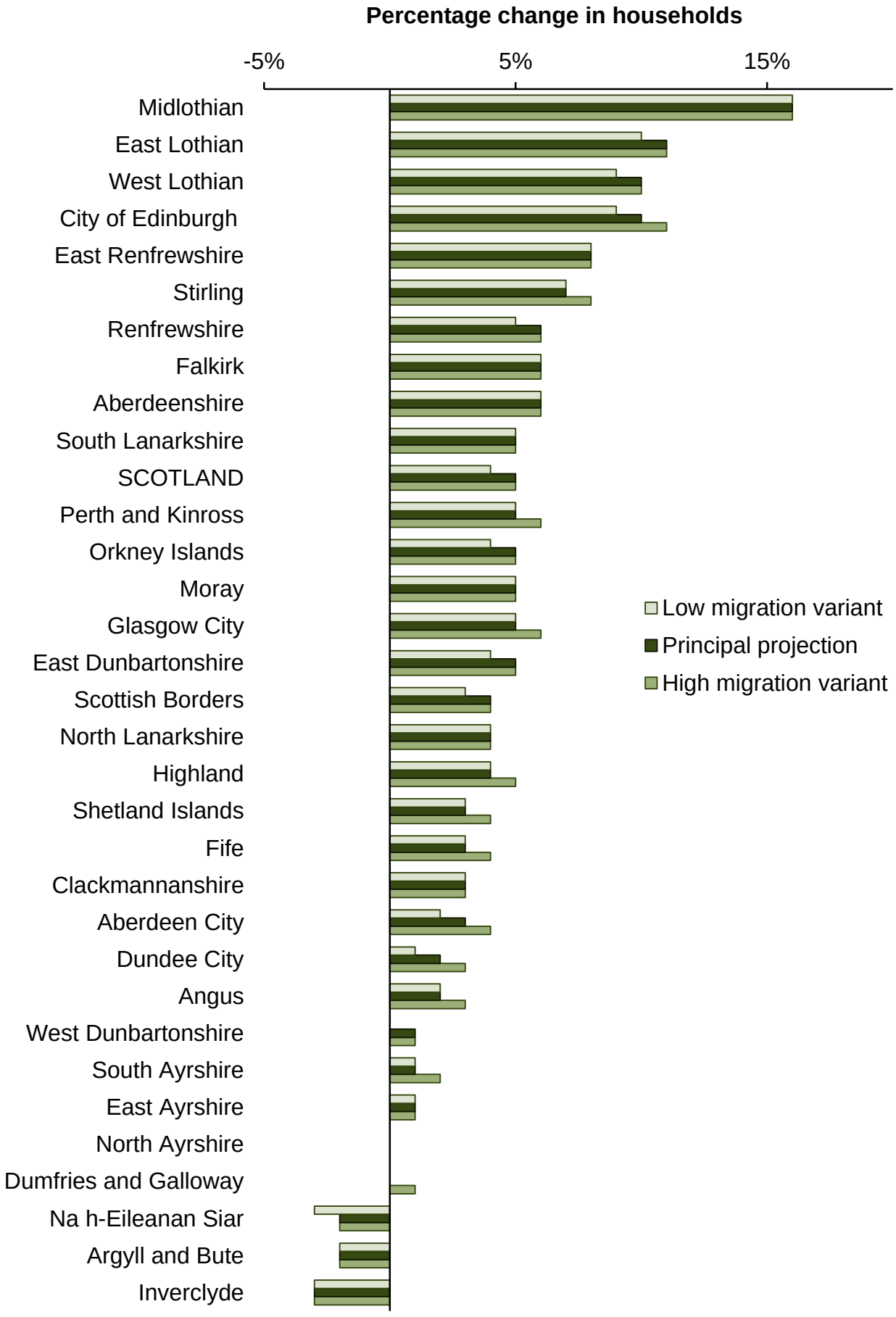
Note: y-axis scale does not start at zero.

The use of low or high migration population projections has little effect on the projected type of households that the population is living in. The proportions of all households in each household type projected in 2043 are not markedly different in the variant projections compared with the principal projection. The same is true for the proportion of all households for each household reference person age group. The small differences in each variant household projection are due to differences in the age distribution of the underlying populations in each variant population projection, as different age groups tend to form different types of household.

Figure 25 compares the percentage change in the number of households from 2018 to 2028 under the principal, low and high migration variant projections for each Council area. The variant projections tend to have the biggest impact on the areas which have relatively high levels of in- and out-migration, in particular for the four city Council areas. Their impact is relatively low for most other areas.

8) More details available in an interactive data visualisation of the 2018-based household projections showing the principal and variant projections for each Council area.

Figure 25: Projected percentage change in households, principal, low and high migration variant projections, by Council area, 2018 to 2028

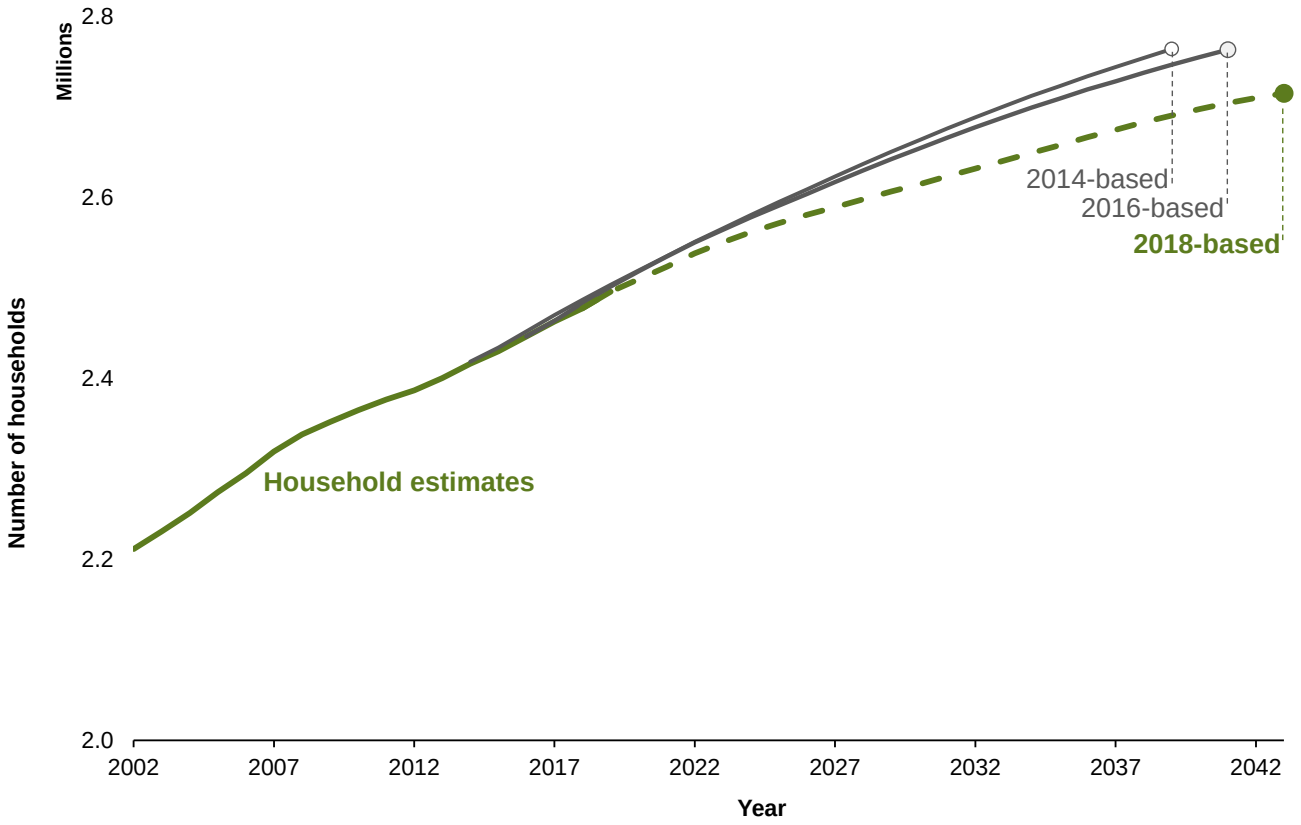


7. Comparison with previous projections

Household projections for Scotland covering a 25-year projection period are published every two years. Figure 26 compares the total number of households projected in the latest (2018-based) principal household projection with the 2014- and 2016-based principal projections. For more details on these previous projections go to 'Household Projections for Scotland' on the NRS website.

The 2014-based principal projection suggested an average annual increase of around 13,800 households per year between 2014 and 2039, corresponding to an overall increase of 14% over the 25-year projection period. The 2016-based and the 2018-based projections have suggested successively lower average annual increases of 12,700 and 9,500 households per year, corresponding to overall increases over the 25-year projection period of 13% and 10% respectively.

Figure 26: Comparison with previous household principal projections (2014-, 2016- and 2018 based) and household estimates



Note: y-axis scale does not start at zero.

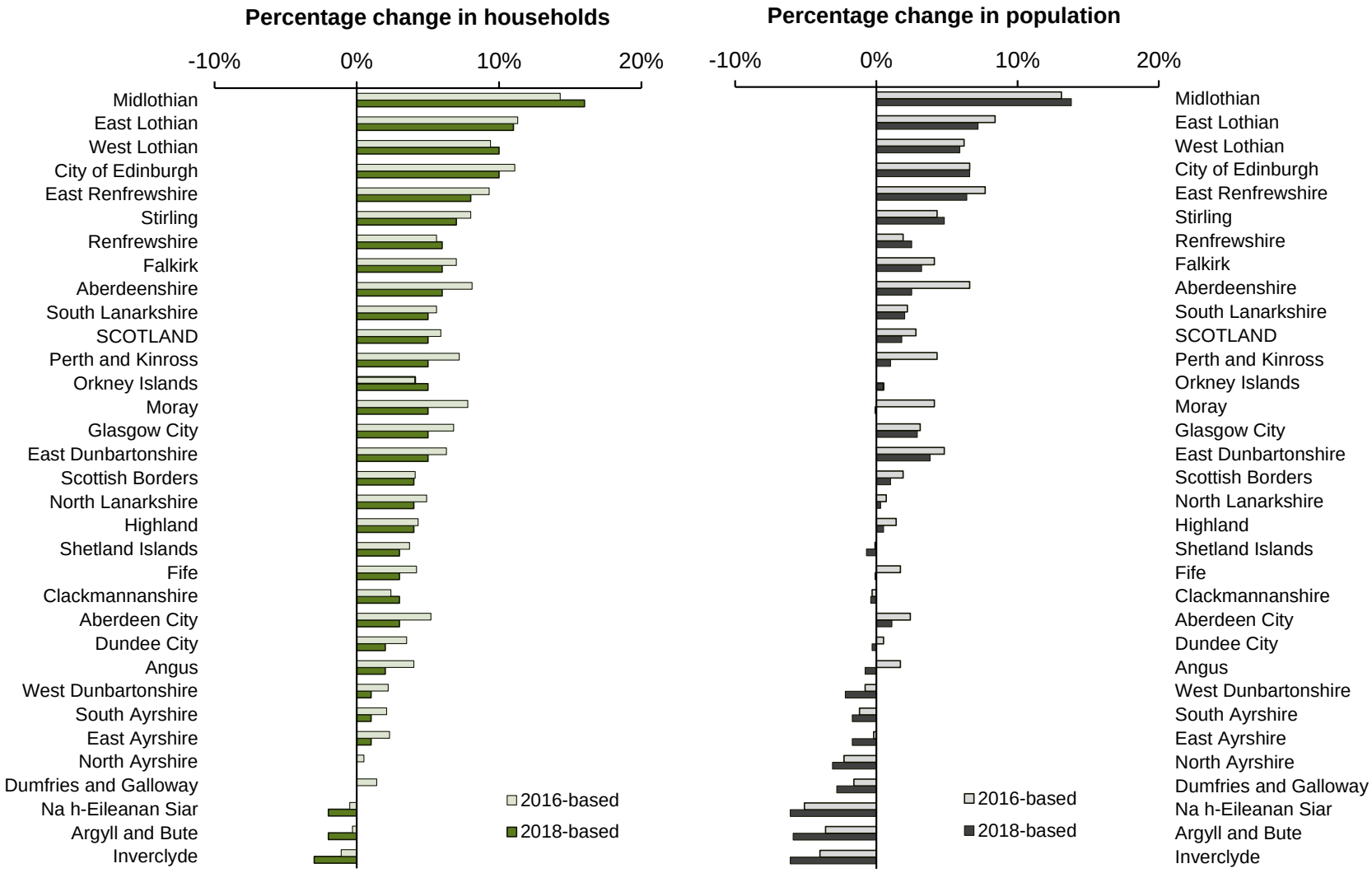
The 2018-based projections are different to the 2016-based projections for several reasons. This includes actual changes in household estimates, household type distribution, and in factors underlying the population projections such as migration rates. However, the main factor is that any lowering or raising of the population projections from one base to the next will affect the corresponding set of household projection results. Further details on the sub-national population projections methodology can be found on the NRS website. In addition, a number of methodological modifications were implemented for the 2018-based household projections. Further details of these modifications, and their impact on the projections, are described in Section 8 - Methodology.

The biggest relative changes between the 2016- and 2018-based household projections are at council level, rather than for Scotland as a whole. Figure 27 shows the percentage change over the period 2018 to 2028 in the 2016- and 2018-based household projections for each Council area, the equivalent figures from the population projections and the relationship between the two sets of figures.

In general, the 2018-based household projections are lower for the majority of Council areas, but they are higher in Clackmannanshire, Midlothian, Orkney Islands, Renfrewshire and West Lothian. The average percentage change, from 2018 to 2028, in the household projections is higher than in the population projections over the same period, due to more people living alone or in smaller households.

For some Council areas it is particularly clear that differences in the 2016- and 2018-based population projections account for much of the differences between the 2016- and 2018-based household projections. For example, the number of households in Midlothian is projected to increase by 16% in the 2018-based projection compared to an increase of 14% in the 2016-based projections. This largely reflects an uptick between the two sets of population projections for Midlothian, with the 2018-based projection showing a 14% increase compared to a 13% increase in the 2016-based projection.

Figure 27: Projected percentage change (2018 to 2028) in the number of households and population by Council area; 2016- and 2018-based household and population projections



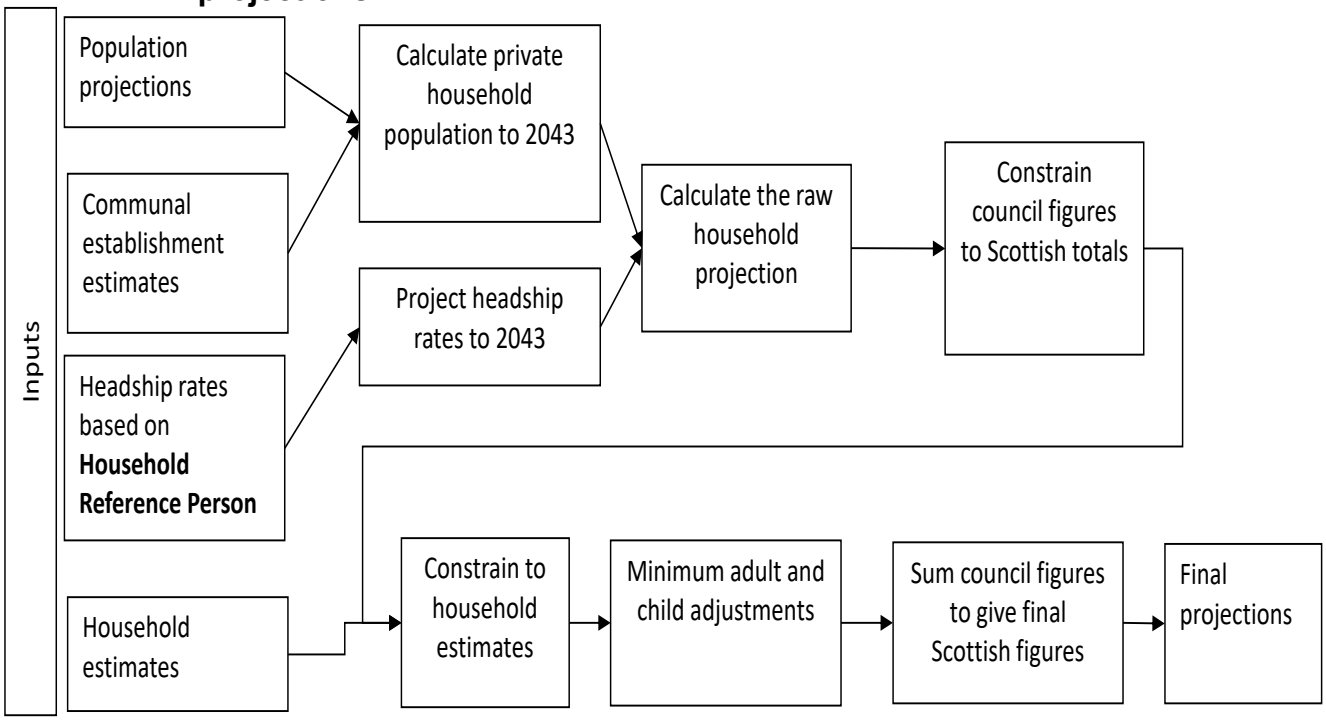
8. Sources and methods

Summary

The household projections are based on population projections produced by the National Records of Scotland (NRS). The number of people living in private households is estimated by taking the population projections for each year and subtracting the number of people living in communal establishments, such as student halls of residence, care homes or prisons. To estimate the number of households of each type, information on household formation is projected forward from Scotland's Census 2001 and 2011, for each household type, age group and Council area. This information is then applied to the private household population to produce the basic household projections.

The overall projections for Scotland are believed to be more accurate than those for individual Council areas; therefore, the Council area projections are constrained to the Scottish total. Each year NRS produces estimates of the total number of households in each Council area, based on Council Tax data. These estimates are based on more recent data than the household projections therefore the household projections for 2018 and 2019 are adjusted to match the household estimates (on the NRS website), and for 2020 onwards the projections are adjusted by the same proportions as 2019.

Figure 28: Flow diagram of the method used to produce household projections



Household types and age groups used in the household projections

Household projections are produced for each Council, Strategic Development Plan and National Park area, broken down into seven household types, based on the number of adults and children living in the household, and sixteen age groups, as follows:

Table A: Household types and age groups used in the household projections

Household types	Age group
	16-19
1 person households:	20-24
	25-29
1 adult: male	30-34
1 adult: female	35-39
	40-44
2 person households:	45-49
	50-54
2 adults	55-59
1 adult, 1 child	60-64
	65-69
3+ person households:	70-74
	75-79
1 adult, 2+ children	80-84
2+ adults, 1+ children	85-89
3+ adults	90+

Data sources

Four sets of data are used as inputs to the household projections:

- 2018-based population projections
- estimates of the proportion of the population in each age group that are resident in communal establishments in 2018
- headship rates based on Household Reference Person data from Scotland's Census 2001 and 2011
- 2018 and 2019 household estimates.

Population projections

The first input into the household projections is the 2018-based population projections for Scotland. These are produced for Scotland by Council area, sex and single year of age, using assumptions about births, deaths and migration.

The relevant population for household formation is taken to be the adult population, aged 16 or over. The low and high migration variant population projections used in the variant household projections are taken from the same publication.

Communal establishment estimates

Estimates of the proportion of the population living in communal establishments (i.e. communal establishment 'rates'), such as care homes or prisons, are used to derive the number of people living in private households from the total population given in the population projections. These proportions are calculated, by age group and sex, from the mid-2018 population estimates published by NRS and from the numbers of residents in communal establishments collated by NRS.

Numbers of residents in communal establishments are collected from a range of data sources, depending on the establishment type. The data is chosen to represent, as closely as possible, the census definition of residence, that is those individuals 'staying, or expecting to stay, in a residential establishment for six months or more'. Individuals resident for shorter stays would be considered visitors and are not included, as they should be accounted for in their usual place of residence.

Data is collected from a range of administrative data sources and surveys and refers to 2018, where possible. For some establishment types, however, no such source is available, or 2018 data is not available, and in these cases earlier administrative data or 2011 Census data is used. Table B details the sources of communal establishment data and the year to which the data refers. In some cases, more than one data source was combined and estimation was required to obtain a full age/gender breakdown for all establishments.

The communal establishment rates used for the 2018-based household projections can be found on the NRS website, in the 'Source Data Tables'. Communal establishment rates for the SDP area and National Parks projections are available on request.

Table B: Communal establishment data sources

Establishment type	Data source	Year of data
Adult care[1]	Care Inspectorate (List of registered establishments)	2018
	ISD[2] Care Home Census	2017[7]
Children's care[1]	Care Inspectorate (List of registered establishments)	2016
	SG[3] Looked After Children Statistics	2016
Defence[1]	NRS[4] Armed Forces Data Collection	2018
	DASA[5] Regular Forces by Age and Sex	2012
	2011 Census	2011
Hospitals	ISD[2] SMR01 (General/Acute)	2018
	ISD[2] SMR04 (Mental Health)	2018
	SG[3] Continuing Care Census (Other NHS)	2018
Hostels	2011 Census	2011
Hotels and boarding houses	2011 Census	2011
Prisons	SG[3] Prison Statistics	2014/18[8]
Residential Schools	SG[3] Education Analytical Services	2018
	SG[3] Education Scotland	2018
Student Halls of Residence - Further Education	2011 Census	2011
Student Halls of Residence - Higher Education[1]	NRS[4] Communal establishment address list	2018
	HESA[6]	2018
Other	2011 Census	2011

Footnotes

1) For this establishment type data from two or more sources are combined to estimate the age/gender breakdown of residents in each council area, as no comprehensive source was available.

2) ISD - Information Services Division of NHS Scotland.

3) SG - Scottish Government.

4) NRS - National Records of Scotland.

5) DASA - Defence Analytical Services and Advice.

6) HESA - Higher Education Statistics Agency.

Further information on the communal establishment data collection and the uses of this data can be found in the methodology section of the 2016-based household projections for Scotland.

7) 2018 data not available by time of publication, 2017 data was used instead.

8) Age/sex breakdown not available for 2018, so 2018 totals were constrained to 2014 age/sex breakdown

Household representative rates

The household formation information used in the household projections is in the form of household representative rates (HRRs). These are derived from Scotland's Census 2001 and 2011 data on household reference persons (HRP). In the census, one member of each household is defined as the 'household reference person', that is the eldest economically active resident in the household or, if there are no economically active residents, the eldest economically inactive resident). The HRR for a particular age group in a particular area is the proportion of people in that group who are HRPs. The value of the HRR will be between zero and one.

HRRs are then multiplied by the private household population to produce a projected number of households. The number of people who are the HRP for particular household types is the same as the number of households of this type.

Household estimates

Household estimates are published annually by NRS, and the household projections use the estimates from the latest two years (2018 and 2019). The estimates are based on Council Tax data, and provide the total number of households for each Council area in Scotland. The latest household estimates can be found in the 'Estimates of Households and Dwellings in Scotland, 2019' publication on the NRS website.

Strategic Development Plan and National Park geographies

The best fit areas used for projecting households in the SDP areas and National Parks have been built up from postcodes.

NRS produces population and household projections for the 32 council areas, four SDP areas and two National Park areas. SDP and National Park areas are non-standard geographies and do not nest neatly within the council area boundaries. To produce projections for these non-standard geographies, councils are split into parts. These council area parts can be combined together, or combined with other whole council areas, to form the SDP areas and National Parks. In total nine councils have been split in this manner, these are:

- Aberdeenshire;
- Angus;
- Argyll and Bute;
- Fife;
- Highland;
- Moray;
- Perth and Kinross;
- Stirling; and
- West Dunbartonshire.

Each area has been split into two parts with the exception of Perth and Kinross, which has been split into three parts. Figure 29 and Figure 30 show how the council areas have been split.

Figure 29: Map showing the council areas and council area parts within strategic development plan area boundaries

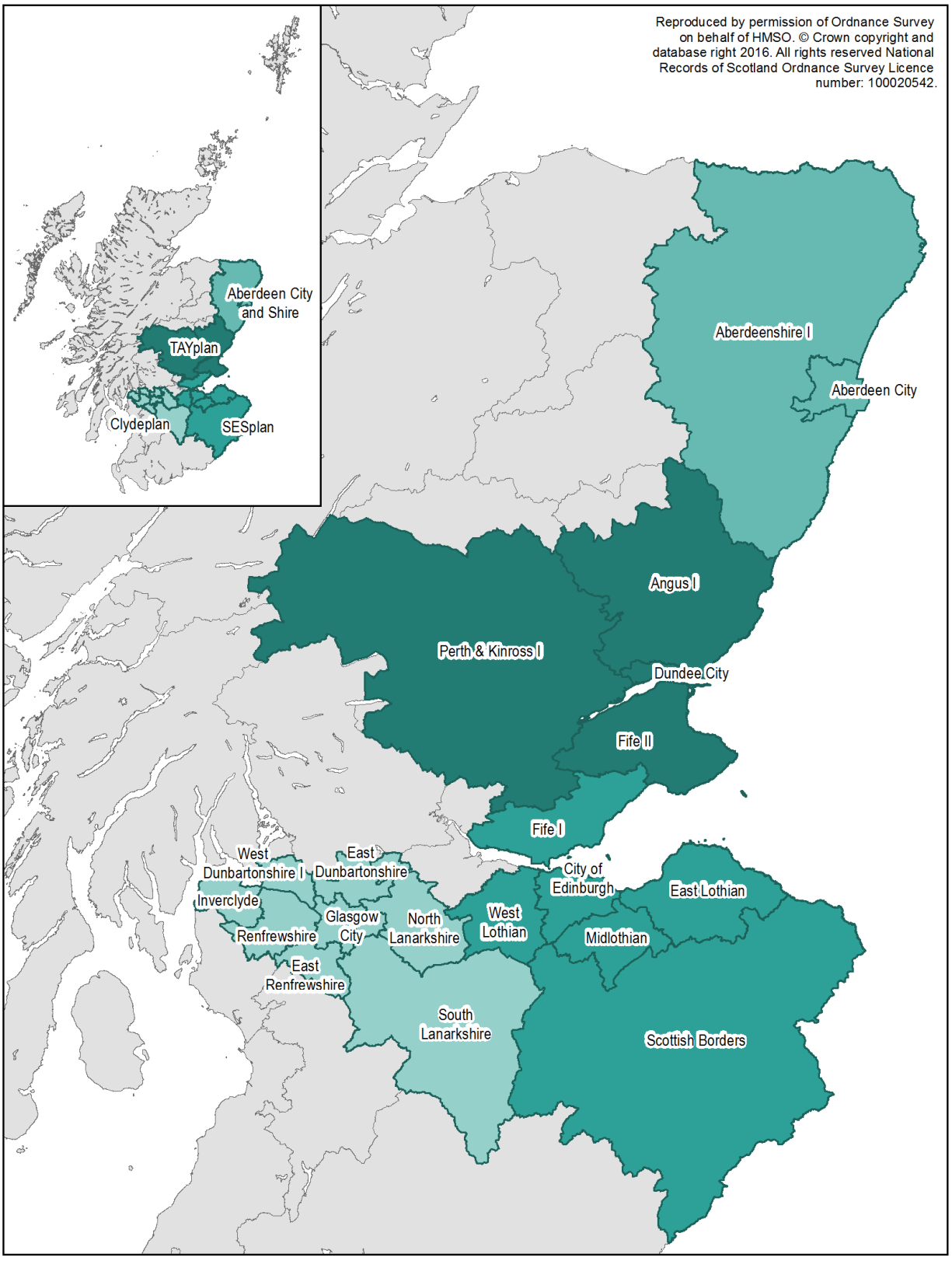
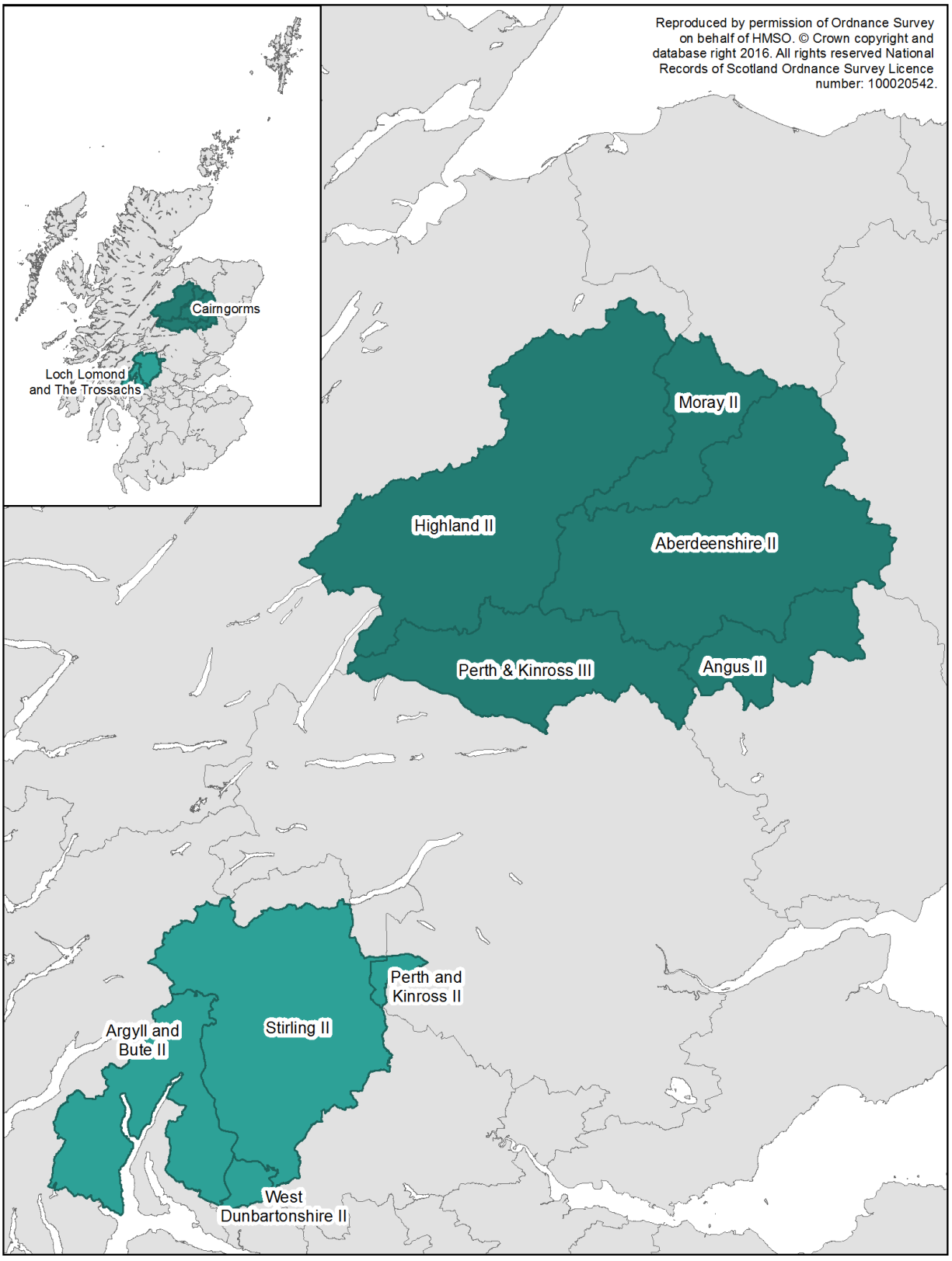


Figure 30: Map showing the council area parts within national park area boundaries



Methodology

The methodology for the 2018-based household projections takes the previous 2016-based methodology as its starting point, with some modifications being made to reflect changes in data availability over time and changing assumptions about household formation and population change.

Detailed information about the methodological modifications is listed in the paragraphs below.

Change in the household representative rates (HRRs) information source

The 2016-based household projections methodology used data from the 1991, 2001 and 2011 Censuses on 'head of household' as the basis for calculating household representative rates by age group and household type. Head of household is therefore a bit of a subjective metric as there will not necessarily be a consistency of approach across households as to who is the first (adult) person entered on the census form. It can also lead to inconsistencies between censuses. For example, a higher proportion of women were recorded as the first person in 1991 than in 1981, resulting in a spurious increase in the projected headship rates for married women, compensated for by a decrease in households headed by married men.

Head of household:
the first person on the census form for a household who is aged 16 or over and usually resident at the address of enumeration, irrespective of any other characteristics of that person, or the other people in that household. In the last resort the oldest resident aged under 16 is taken as the head.

The 2018-based projections use census information on the household reference person (HRP) as the variable for calculating the HRRs. This uses a well-defined set of rules regarding economic status and age to choose the relevant person as the household 'head' and is not affected by the choice of whichever person happens to complete the census form for a household. A full definition of HRP is available on the Scotland's Census website.

Household Reference Person
is the eldest economically active person in the household, then the eldest inactive person if there was no economically active person.

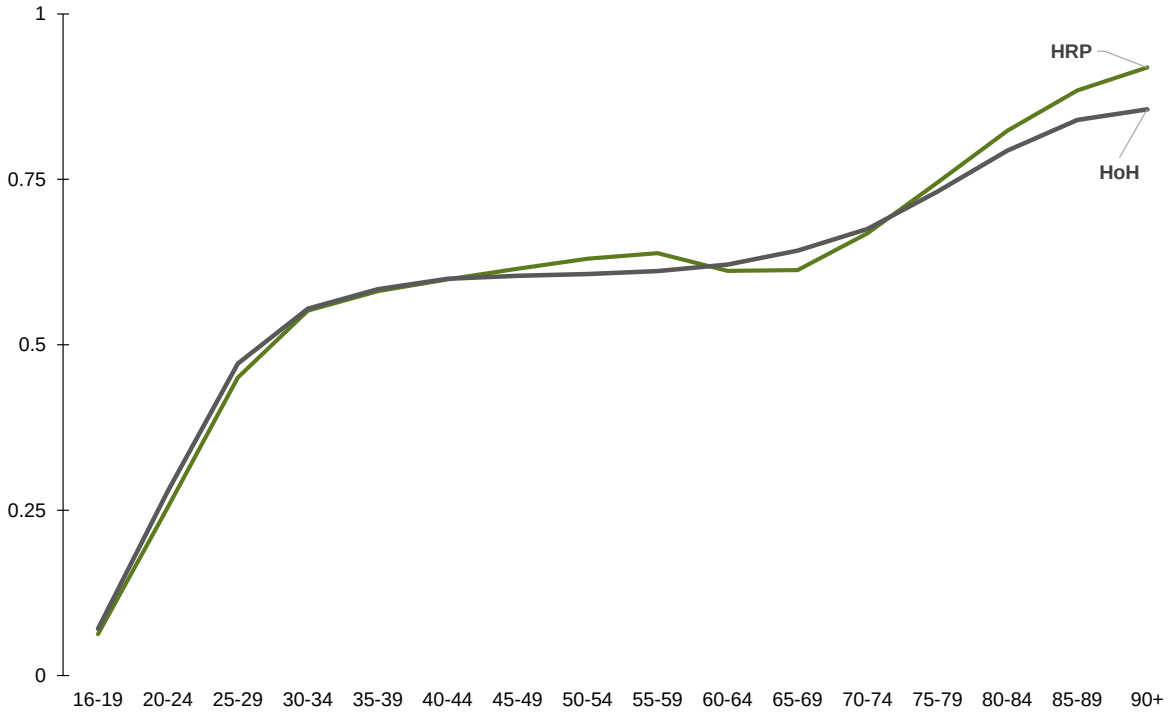
The concept of a HRP was introduced in the 2001 Census to replace the traditional concept of the 'head of the household'. It will be a variable available for analysis from the next (2022) Census, hence data for it can be incorporated into any future updating of the household projections methodology.

The Office for National Statistics (ONS) use HRP data from the census when calculating headship rates in the household projections for England, so doing

likewise for the NRS household projections will improve consistency between the two methodologies.

Figure 31 compares, from the 2011 Census data, headship rates by age derived from HRP and from head of household (HoH) data. The two rates are generally very close up to age 50, and the overall pattern is broadly similar across all age groups. The HRP-derived headship rates are slightly higher than the HoH-derived rates for the 50 to 59 age group and slightly lower for the 65-69 age group. This may reflect instances of couple households where the older person in the couple is entered first on the census form (and so is designated the 'head of household) but is retired in recent years while their (younger) partner is still economically active (and so would be the HRP for the household). For households in the 75 and over age group, the slightly higher headship rates on the HRP basis are thought to reflect instances of older couple households where the younger person in the couple may be more likely to complete the census form for the household and enter their details first (and hence be designated as the HoH) while the older person would be defined as the HRP.

Figure 31: Household representative rates for all households by age using the household reference person (HRP) and 'head of household' (HoH) information – Scotland's Census 2011



In terms of projected numbers of households, Table I provides an illustrative comparison of the percentage change between 2018 and 2028 in number of households using projected headship rates based on HRP and on HoH. The projected percentage changes in number of households are generally very similar for all age groups. Overall, around of 2,000 more households are projected using headship rates based on HRP data rather than on HoH data.

Table I - Projected percentage change (illustrative) in number of households by age of HRP/HoH, Scotland, 2018-2028

Age of HRP/HoH	% change HRP	% change HoH
16-19	12.5	12.6
20-24	-6.5	-6.2
25-29	-15.5	-15.1
30-34	1.3	1.4
35-39	13.5	13.9
40-44	16.6	17.1
45-49	-5.9	-5.9
50-54	-21.4	-21.5
55-59	-4.1	-4.4
60-64	16.1	16.0
65-69	17.5	18.8
70-74	2.8	7.1
75-79	28.2	23.1
80-84	32.3	30.3
85-89	19.0	18.3
90+	27.9	27.9
Total	**4.9**	**4.8**

Table II shows that the projection of households in 2028 by household type is very similar regardless of whether HRP-based or HoH-based headship rates are used.

Table II - Projected households, percentage by household type, Scotland, 2028

Household type	HRP	HoH
1 adult 2+ children	2.6	2.6
1 adult, 1 child	3.5	3.5
1 person female	19.2	19.3
1 person male	18.0	18.0
2 person all adult	32.0	31.8
2+ adult 1+ children	17.0	17.1
3+ person all adults	7.8	7.7
Scotland	**100.0**	**100.0**

Change in the Census year

The 2016-based household projections methodology used a weighted combination of two sets of projected headship rates which were produced using a modified two-point exponential model: one used headship rates from the 1991 and 2001 Censuses, and the other used headship rates from the 2001 and 2011 Censuses. For more details on how the HoH were projected check the methodology section in the 2016-based household projections for Scotland publication. The weights were chosen so that the projection for 2016 had a distribution of households across the seven household types that is as close as possible to the distribution found in the

adjusted 2016 Scottish Household Survey data. The 1991-2001 component carried a 21% weight.

The results of the 2011 Census showed that there was less change in the types of household that people in Scotland live in between 2001 and 2011 than there was between 1991 and 2001. Labour Force Survey data also show that, at Scotland level, the downward trend in average household size slowed markedly at the turn of the century, as illustrated in Figure 32. While average household sizes in most council areas have continued to drift downwards since 2001, it has actually increased in Edinburgh and Glasgow over the last ten years.

Figure 32: Average household size in Scotland, 1996 – 2018

Source: Labour Force Survey

Given these trends, and the relatively low weight attaching to the 1991-2001 headship rate trend component, we have concluded that the latter should not be used in the 2018-based projections as they will not be so relevant for making projections over the period 2018 to 2043. (It is calculated that the weight attaching to 1991-2001 headship rate trend component would have reduced to just 9% in the 2018-based projections used the previous methodology.)

Two-point exponential model:

$y_i = k + ab^x{}_i$

Where:

i is the year, from 2018 to 2021
y(i) is the headship rate in year i
c is the most recent census year (2011)
d is the furthest away census year (2001)
k is 1 if y c > = y d and k is 0 if y(c) < y(d)
a is y(d) minus k
b is (y(c) – K) / (y(d) – k)
x(i) is (i – d) / (c – d)

An additional consideration is that HRP data are not available from the 1991 Census. Instead the 2018-based projections will use a two-point exponential model based on just the 2001 and 2011 Censuses for projecting forward trends in headship rates. This makes the projection more reactive to recent trends, while the model is a little clearer and easier to understand. It is also consistent with the model used by ONS in their 2018-based household projections for England.

An illustrative 10-year projection, 2018 to 2028, indicates that the increase in the number of households using a two-point exponential model based on the 2001 and 2011 Censuses is around 11,000 (0.4%) lower compared with the increase resulting from using a modified two-point exponential model based on 1991, 2001 and 2011 Censuses.

Change in the number of years HRRs are projected for

The methodology used for the 2016-based household projections trended forward headship rates for the whole of the projection period, 2016 to 2041. Given that for the 2018-based projections we will be using a shorter trend (2001 to 2011) to project forward headship rates, limiting the length of this projected trend to a maximum of 10 years (that is, from 2011 to 2021), and then holding these constant for the remainder of the projection period, mitigates the risks of projecting forward a potentially more uncertain trend for the entire projection period.

This implicitly recognises an uncertainty in how headship trends will continue and potentially avoids over-projecting these trends. It is not yet clear, for example on how the economic and other consequences of the Covid-19 pandemic will affect things.

Table III - Projected percentage change in number of households by age of household reference person (HRP), Scotland, 2018-2028

Age of HRP	Headship rate projected to 2021	Headship rate projected to 2043
16-19	12.5	21.4
20-24	-6.5	-4.6
25-29	-15.5	-16.6
30-34	1.3	1.5
35-39	13.5	14.5
40-44	16.6	18.5
45-49	-5.9	-3.8
50-54	-21.4	-19.1
55-59	-4.1	-1.7
60-64	16.1	17.1
65-69	17.5	13.0
70-74	2.8	-9.5
75-79	28.2	35.0
80-84	32.3	34.7
85-89	19.0	19.9
90+	27.9	29.9
Scotland	**4.9**	**5.4**

Table III shows relatively small differences for age groups in the projected percentage change between 2018 and 2028 in the number of households. Overall, of the order of 12,000 fewer households are projected for 2028 where headship rates are projected forward as far as 2021 compared to being projected forward to the end of the projection period in 2043. Under either scenario a 5% (rounded) increase is projected.

No other modifications have been made to the methodology used for the 2016-based projections.

Household projections methodology

There are several stages to the calculation of the household projections. The first stage calculates the private household population. This is done by first estimating the number of communal establishment residents in each year of the projection, by applying the communal establishment rates described above to the population projections. The communal establishment residents are then subtracted from the population projections to give the private household population for each projection year. The projected private household population for 2018 to 2043, for Scotland and each Council area, can be found on the NRS website, in the 'Source Data Tables'. Variant private household populations are also available in the same dataset, based

on the high and low migration variant population projections. Source data for the SDP area and National Parks projections are available on request.

Strategic Development Plan area projections are produced by combining whole Council area projections with parts of other Council Areas (Figure 29). Where entire Council areas are included in an SDP area, these whole council area projections are combined with new projections for the other parts of council areas making up the SDP areas to obtain projections for the overall SDP area. National Park projections are not built up using any whole council areas, as the National Parks are made up entirely of parts of council areas (Figure 30).

The second stage in calculating the household projections is to estimate the number of households from the private household population, using the headship rates described above. A projected headship rate is produced using a two-point exponential model using headship rates from the 2001 and 2011 Censuses.

The formula for the two-point exponential model is as follows:

$$y_i = k + ab^{x_i}$$

where i = the year, from 2018 to 2021

y_i = the headship rate in year i

k = 1 if $y_c \geq y_d$
0 if $y_c < y_d$

a = $y_d - k$

b = $(y_c - k)/(y_d - k)$

x_i = $(i - d)/(c - d)$

c = the most recent census year (2011)

d = the furthest away census year (2001)

The projected headship (and non-headship) rates are constrained so that:

- they cannot individually go above one or below zero; and
- they sum to one within an area and age group.

The projected headship and non-headship rates from the 2018-based household projections can be found on the NRS website in the 'Source Data Tables'.

The household projections are calculated by applying the projected headship rates to the private household population projections to give an estimate of the number of household reference persons in each of the projection years for each household type, age group of the household reference person and area.

The final stages of the household projection methodology apply a series of adjustments to the household projections. The first adjustment is to control the Council area projections to the all-Scotland projection, as the latter is thought to be more accurate. This ensures that the Council area projections sum to the total for Scotland.

For the National Park projections, the first adjustment is to control the National Park projections, including a projection of the 'Rest of Scotland', to the all-Scotland projection, as the latter is thought to be more accurate. For SDP areas, the

adjustment is different. Where a whole Council area (CA) is projected, the projections for all Council areas are controlled to the all-Scotland projections. In contrast, where sub-CA areas are projected, projections are produced for the area that is within the SDP area and the area that is not, and these sub-CA projections are controlled to the main CA projection.

The next adjustment is for the total number of households within each area in 2018 and 2019 to be controlled so that it is equal to the household estimates for these years. The household projections for 2019 onwards are then adjusted by the same proportions as in 2019, to preserve the trend in the household projections. This adjustment allows us to incorporate more recent information on household numbers than the 2011 Census.

The final adjustment ensures that the minimum number of adults required to fill the projected households is not greater than the projected adult private household population (e.g. a minimum of three adults would live in a ‘three or more adult’ household). The same check is carried out for children. Where an adjustment is required, the number of households is kept constant, but the balance of household types is adjusted, to reduce the number of large households and increase the number of smaller households. For the 2018-based household projections, a minimum adult adjustment was required for Argyll and Bute (2038-2043) and for Highland (2043) for the principal variant.

Definitions and limitations of the household projections

Definitions

The following definitions are used in this publication:

Average household size: The average number of people in a private household, calculated by dividing the private household population by the number of households.

Children: Where children are included in a household type, the 2011 Census definition of a dependent child is used. A dependent child is anyone aged 0 to 15 in a household (whether or not in a family) or a person aged 16 to 18 in full-time education and living with his or her parent(s) or grandparent(s). It does not include any people aged 16 to 18 who have a spouse, partner or a child living in the household.

Communal establishment: An establishment providing managed residential accommodation, such as a hospital, care home, prison, student hall of residence or barracks. 'Managed' means full-time or part-time supervision of the accommodation.

Household: the 2011 Census definition of a household is used – one person living alone or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area. This excludes people living in communal establishments.

Household reference person (HRP): The HRP is defined in the census as the eldest economically active person in the household or, if there are no economically active persons, the eldest economically inactive person. The number of household reference persons will be equal to the number of households.

Household representative (or headship) rate: The proportion of people for particular household types within any particular age group and Council area is known as the 'headship' rate.

Private household population: The population living in private households, i.e. people not living in a communal establishment.

National Parks are protected areas of beautiful countryside, wildlife and cultural heritage. There are two National Parks in Scotland: Cairngorms National Park (CNP) and Loch Lomond and the Trossachs National Park (LLTNP). Each National Park is managed by a National Park Authority, which produces a local development plan. The locations and boundaries of the National Parks are shown in Figure 30 in the Sources and Methods section.

Strategic Development Plan (SDP) areas were created in 2008 to help deal with region-wide issues that cross boundaries of council areas, for example the scale of housing and the transport and water and connections needed . Around three quarters of the population of Scotland live in Scotland's four SDP areas: Glasgow & Clyde Valley Strategic Development Plan Area; Aberdeen City and Shire Strategic

Development Plan Area; Edinburgh and South East Scotland Strategic Development Plan Area (SESplan SDP area); and Dundee, Perth, Angus and North Fife Strategic Development Plan Area (TAYplan SDP area). Strategic Development Plan Authorities prepare Strategic Development Plans, which set the context for Councils' Local Development Plans. The locations and boundaries of the SDP areas are shown in Figure 29 in the Sources and Methods section.

Limitations

These household projections have limitations. A projection is a calculation showing what happens if particular assumptions are made. The household projections are trend-based and are not, therefore, policy-based forecasts of what the Government expects to happen. For example, the assumptions do not take account of impact of the COVID-19 pandemic or political decisions such as the referendum vote to leave the European Union. They are based on the population projections and, as a result, assumptions used for the population projections, such as future migration, fertility and mortality, will affect the household projections. These assumptions are based on past trends. Projections based on small groups of people or households tend to be less reliable than those based on larger groups.

The household projections also rely on projecting trends in household formation from Scotland's Census 2001 and 2011 forwards to 2021. They show what is likely to happen if these trends continue into the future. There are various reasons why patterns of household formation may be different in the future, such as economic changes or the impact of new government policies, as well as imbalances between housing supply and demand. Assuming the continuation of past trends results in uncertainty in the projections, and this uncertainty increases the further into the future they are taken. Local planning policies are often intended to modify past trends and Development Plans may demonstrate departures from the projections that seem better able to fit particular local circumstances.

As the projections rely solely on projecting household formation trends from census data they will not reflect any changes in household formation following the 2011 Census. They will become increasingly unreliable as the start year moved further from 2011.

This report focuses on the 'principal projection', that is the projection based on the assumptions that we think are most likely to occur, but it also includes sections on household projections prepared using alternative assumptions. These variant projections are discussed in Section 6.

Relationship to other projections

These projections apply a single methodology across all Council areas. Individual areas may have a wider range of local information, based for example on local population or household surveys, on which to compile local projections. The supporting material on the NRS website should help describe the basis of our household projections. We are happy, where possible, to provide additional advice or information to assist in any local projections. Please contact us at statisticscustomerservices@nrscotland.gov.uk

9. Links to related statistics

More detailed information about Scotland's households can be found in the Households section on the National Records of Scotland website. Statistics on housing in Scotland are available from the Housing and Regeneration Statistics page of the Scottish Government website.

A cross-government working group on housing statistics exists to provide an improved coherent picture of the UK housing landscape for users of statistics on this topic. Further information on the work of this group is available on the Government Statistical Service website.

Other household related topics can be found within the following websites:

National Records of Scotland (NRS) publications (available on the NRS website).

The NRS **household estimates** show annual estimates of the number of households and dwellings in Scotland.

The NRS population **estimates** and **projections** show annual estimates of the number of people in Scotland, and projections for future populations.

Scotland's census

Results and information about the 2011 Census are available from the **Scotland's census** website. This includes '**Household composition for specific groups of people in Scotland**', an analytical report published in August 2015 which looks at household composition data from the 2011 Census and compares it to the 2001 Census.

Scottish Government statistics

The Scottish Government produces a range of statistics on housing in Scotland, including the number of new homes built each year and numbers of conversions and demolitions. These statistics are available from the Housing Statistics for Scotland website, and include an annual summary of the key trends in housing.
Scottish Government Planning Statistics, which include data on vacant and derelict land, can also be found on the Scottish Government website.

Up-to-date information about the characteristics, attitudes and behaviour of Scottish households and individuals on a range of issues can be found on the Scottish Household Survey section of the Scottish Government website.

Up-to-date information on the State of the Economy and a Monthly Economic Brief for Scotland can be found in the Economy section of the Scottish Government website.

Centre for Housing Market Analysis

The Centre for Housing Market Analysis (CHMA) is part of the Scottish Government's Communities Analysis Division. It provides support to councils and others to aid the strategic planning of housing in Scotland.

The CHMA's monthly 'Scottish Housing Market Review' collates a range of statistics on house prices, housing market activity, cost and availability of finance and repossessions. More information, including the bulletins themselves, can be found on the CHMA website.

Household estimates and projections for other parts of the UK

Household estimates and projections for other parts of the UK are available from the following sources and websites:

- England: Office for National Statistics **Office for National Statistics**
- Wales: **Welsh Government**
- Northern Ireland: **Northern Ireland Statistics and Research Agency**

There are many similarities between these projections, but also some subtle differences between methods. Some guidance notes on the coherence and comparability of household projections for each of the UK countries is available on the ONS website. This provides a useful starting point in understanding the methods used by each country.

Scottish Government statistics user and provider consultation network (ScotStat)

You can register with the Scottish Government's ScotStat website to receive notification of forthcoming household estimates and projections publications. By registering you will also receive other updates relating to these statistics, including notifications of user consultations. You can also choose to receive notifications relating to other areas of Scottish Official statistics.

10. Notes on statistical publications

National Statistics

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the UKSA website).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc can be found in the About this Publication document that is published alongside this publication on the NRS website.

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the devolved Scottish Administration. Our aim is to provide relevant and reliable information, analysis and advice that meets the needs of government, business and the people of Scotland. We do this as follows:

Preserving the past – We look after Scotland's national archives so that they are available for current and future generations, and we make available important information for family history.

Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.

Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.
You can get other detailed statistics that we have produced from the Statistics section of our website. Scottish Census statistics are available on the Scotland's Census website.

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government ScotStat website.

You can also follow us on twitter @NatRecordsScot

Enquiries and suggestions

Please contact our Statistics Customer Services if you need any further information.
Email: statisticscustomerservices@nrscotland.gov.uk

If you have comments or suggestions that would help us improve our standards of service, please contact:

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